Riverview College Observatory

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN

$\Phi = 33° 49' 46''$ S. $\lambda = 151° 9' 30''$ E. h = 25m. Foundation: Triassic Sandstone.

INSTRUMENTS:

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS, EW)
2. Wiechert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.) (NS, EW)
4. Gailitzin Aperiodic Seismometer with Galvanometer registration (NS, EW, Vert)

		V	T_o	$\epsilon : 1$	$\frac{r}{T_o^2}$		T_1 (Galv.)	T (Pend)	μ^2	V_s
N	1	210	7.5	5.5	0.002	4	11.8	12.2	-0.02	450
	3	168	9.3	4.9	0.029					
E	1	225	6.9	4.6	0.003	4	12.3	12.5	-0.02	530
	3	144	10.8	10.6	0.011					
Z	2					4	10.9	10.8	-0.03	460

No.	Date	Phase	Time (G.M.T.)	Per	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1951		h m. s.	s.	μ	μ	μ	km.	
1	Jan. 1	iPZ	03 27 40	4			+5	3120	Compression.
		iSE	32 21	6		+6		28°1	H 03 21 49
		iSSE	33 45	8		-5			
		iSSSE	34 06	8		-8			
		iZ	34 20	5			+7		
		eLRE	35.0	19					
		ME	37.5	15		10			
2	" 1	iPNEZ	20 21 15	6	+5	+5	-8	2490	Dilatation
		ipPZ	21 30	6			-6	22°4	h 0.005
		iZ	21 37	6			-12		H 20 16 21
		iPPE	21 45	6		-6			
		iZ	21 49	5			-8		
		iN	22 22	4	-7				
		iZ	22 26	4			-12		
		iE	22 29	5		-8			
		iSN	25 13	10	-26				
		iSE	25 15	10		+19			
		iZ	25 17	7			+16		
		isSNE	25 39	8	+37	-28			
		iNE	26 23	7	+24	-17			
		eLRE	26.9	24					
		MZ	28.4	18			17		
		ME	28.9	15		9			
		MN	29.5	14	14				
		iScSE	32 32	10		+16			
3	" 3	iPEZ	02 16 33	4		-2	+6		Compression.
		iZ	16 39	6			+11		
		e(PP)Z	16 56	6					
		e E	17 01	6					
		iE	17 27	8		+6			S cannot be ident-
		iZ	17 31	6			+7		ified.
		iZ	17 43	5			+4		
		iZ	21 34	5			-5		
		i(SS)E	22 03	10					
		eLRZ	23.2	27					
		MN	25.1	16	6				
		ME	25.5	18		11			
		MZ	25.7	18			15		
7	" 3	iPZ	15 57 42	4			-5		Dilatation.
		iPE	57 43	4		+3			Repetition of No.3
		e(PP)Z	58 08	6					
		iZ	58 38	4			+3		
		eLRZ	16 04.3	27					
		MN	06.0	17	5				
		MEZ	06.6	18		5	9		

1951, January.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1951		h m s	s	μ	μ	μ	km.	
11	Jan. 5	e(PS)E	01 23.7	11					
		eLRZ	52.3	25					
		MZ	02 01.5	18			4		
		ME	01.9	18		3			
12	" 5	iPZ	13 30 49	5			+4	2840	Compression
		ipPZ	31 17	5			+4	25°5	h 0.015
		eSE	35 04	8					H 13 25 31
		isSE	35 49	6		-3			
		eLRZ	36.9	22					
		MNEZ	39.9	18	4	2	5		
13	" 6	iPZ	05 30 53	6			-4	11450	Dilatation
		ipPZ	31 44	5			-5	103°0	h 0.03
		iZ	35 30	7			-7		H 05 17 17
		iZ	35 54	6			+9		
		iZ	36 16	4			-5		
		iZ	38 29	8			-7		
		iZ	39 38	6			+7		
		iZ	40 14	8			-7		
		eSKSE	41 07						
		iE	41 14	8		+6			
		iSKKSE	41 42	8		+4			
		e(S)E	42 26						
		iN	42 44	6	-3				
		iZ	43 48	6			-8		
		iPSE	44 25	10		+7			
		iN	45 02	6	-6				
		iE	45 11	8		+7			
		iPPSZ	45 20	4			-9		
		iPPSN	45 23	4	-6				
		iSSE	49 30	9		+8			
		iE	50 41	10		-4			
		e(SSS)E	53 44	20					
		eLZ	06 00.2	30					
14	" 6	e(PP)Z	08 12 49						
		e(SKKS)E	19 32	12					
		eE	22 35	20					
		eE	25 02	10					
		eN	25 12	18					
		e(SS)E	29 46	26					
		eE	32 38	18					
		eLRE	49.9	28					
		MZ	51.3	21			25		
		ME	53.6	21		18			
		MEZ	58.4	18		14	20		
		MN	59.6	18	5				
15	" 6	iPZ	18 15 37	4			+4		Compression
		eE	21 23	6					
		eLE	23.2	21					
		ME	24.2	16		4			
16	" 8	e(P)E	12 00 54	6					Confused by
		e(PP)E	01 34	6					microseisms.
		e(PPP)E	01 50	8					
		iE	02 23	5		+5			
		eLRE	07.8	30					
		MN	09.6	16	8				
		ME	10.4	17		7			
		MZ	10.9	16			10		
18	" 8	iN	18 04 00	5	-7				Masked by
		eE	05 54	20					microseisms.
		eLE	11.7	24					
		MNE	13.5	19		4			
		MN	13.8	19	6				
		i(ScS)E	15 29	4		+5			
		i(ScS)N	15 31	4	+6				
19	" 8	iE	21 47 05	4		+3			Masked by
		iZ	47 09	6			-6		microseisms.
		eLRZ	53.2	28					
		MEZ	56.2	19		7	10		

1951, January.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1951		h m s	s	μ	μ	μ	km.	
21	Jan.10	eP_Z	08 33 10						
		$e(PP)_Z$	34 08						
		$e(PP)_E$	34 11						
		e_E	38 29	9					
		$e(SS)_N$	39 56	8					
		eLR_Z	40.5	27					
		MNE	43.5	18	13	16			
		MZ	43.6	19			23		
22	" 10	iP_Z	10 20 33	5			+4	2790	Compression.
		eS_E	24 53	14				25°1	H 10 15 10
		eLR	26.8	27					
		MN	28.7	18	11				
		MZ	29.6	18			14		
		ME	30.0	18		12			
23	" 10	iP_{NEZ}	19 19 45	4	+3	-2	+4	2280	Compression
		iPP_E	20 07	3		+9		20°5	H 19 15 07
		iPP_N	20 08	4	+5				
		$iPPP_Z$	20 16	5			+5		
		$iPPP_N$	20 17	5	-10				
		iZ	20 24	4			+7		
		iS_E	23 28	8		+8			
		iS_N	23 31	8	-15				
		iZ	23 39	5			+30		
		iE	23 43	8		-20			
		$iPcP_Z$	23 56	6			+17		
		iSS_N	24 00	8	-21				
		iZ	24 10	9			+14		
		$iSSS_E$	24 15	11		+24			
		eLR_Z	24.6	25					
		ME	25.2	16		30			
		MN	25.4	14	22				
		MZ	25.5	20			25		
25	" 12	$i(PP)_E$	10 47 27	2		+1			
		e_E	50 23	8					
		eLR_E	51.8	18					
		MNE	52.5	15	1	1			
27	" 13	$e(P)_E$	06 46 17						
		$e(P)_Z$	46 18						
		$e(SS)_{NE}$	50 04	8					
		eLR_E	50.9	19					
		MNE	51.6	13	1	1			
31	" 14	iP_Z	10 25 30	4			+2		Compression
		iPP_Z	26 40	6			+4		
		iPP_E	26 41	6		-3			
		$iPPP_E$	26 54	5		+2			
		$iSSS_N$	32 41	9	+4				
		eLR_Z	34.1	20					
		MN	37.1	13	22				
		MEZ	37.1	16		16	15		
32	" 15	iPNE	04 17 18	4	-	-		2690	h 0.01
		ipP_E	17 35	5		-		24°1	H 04 12 10
		ipP_N	17 37	4	+				
		isP_{NE}	17 49	5	+	+			Gutenberg's
		iNE	17 54	7	-	-			Tables give;
		iPP_E	18 10	5		-			Δ 2600 km.,23°4,
		i_N	18 12	4	-				h 100 km.,
		i_N	18 25	4	-				H 04 12 16
		$iPcP_E$	21 03	5		-			
		iS_E	21 25	8		+			All readings from
		iS_N	21 27	7	-				Mainka.
		isS_E	22 00	8		+			
		isS_N	22 02	8	-				
		iSS_E	22 35	7		+			
		$iScS_{NE}$	28 19	6	-	+			
33	" 15	$e(P)_Z$	10 38 54	4					
		$e(S)_{NE}$	44 00	7					
		eL_E	48.5	27					
		MNE	50.5	16	30	41			
		MZ	54.4	11			21		

1951, January.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1951		h m s	s	μ	μ	μ	km.	
36	Jan.15	ePZ	22 36 09					2470	H 22 31 13
		iPcPZ	40 04	4			+2	22°2	
		iS_E	40 05	5		+1			
		eLR_Z	41.7	16					
39	" 16	iPN_EZ	13 19 16	3	-2	-2	+3	2620	Compression
		iPPN	19 47	4	-2			23°6	H 13 14 07
		eS_E	23 25						
		i_E	23 32	6		+3			
		i_N	23 35	6	-6				
		i_{NE}	23 43	6	+11	+10			
		i_N	23 53	9	+16				
		eLR_E	25.1	28					
		MZ	26.9	17			5		
		MNE	27.3		3	4			
42	" 16	iP_EZ	22 42 51	3		-2	+4	2700	Compression
		i_Z	44 12	3			+5	24°2	H 22 37 37
		eS_E	47 04						
		i_N	47 14	6	-4				
		i_E	47 19	5		+6			
		iSS_N	48 01	7	+12				
		$iSSS_N$	48 15	7	+14				
		eLR_Z	48.8	24					
		MN	50.3	16	6				
		MEZ	51.0	16		6	7		
43	" 17	$(i)_Z$	00 [illegible] 44	3			+3		Microseisms present.
		$e(S)_E$	01 05 37	13					
		i_N	06 39	7	+4				
		eL_Z	07.9	22					
		MEZ	09.7	16		2	3		
44	" 17	e_E	16 05 16						
		eL_E	12.2	21					
		MN	13.6	16	3				
		ME	13.9	19		4			
		MZ	14.1	19			6		
45	" 17	$e(S)_E$	17 05 24						
		MN	07.2	13	6				
		MEZ	07.5	13		5	3		
47	" 21	$(i)_Z$	12 45 48	3			+2		
		e_E	52 34	11					
		e_N	56 14						
		eL_E	13 00.8	20					
		ME	04.1	18		1			
49	" 22	ePE_Z	10 36 19					2980	H 10 30 40
		ipP_Z	36 28	6			+10	26°8	
		i_Z	36 48	6			-6		
		iPP_E	37 02	9		+6			
		eS_E	40 51	8					
		eL_E	43.9	24					
		MN	45.9	16	11				
		MEZ	46.1	16		15	21		
50	" 22	$eSKKS_E$	12 40 27						
		ePS_E	42 14						
		eLR_Z	13 01.9	23					
		MNEZ	08	19	2	2	4		
51	" 23	eP_E	07 02 04					6080	Readings from
		ePP_E	04 05					54°7	Mainka.
		eS_E	09 40						
		eL_E	15.6						
		ME	19.9						
54	" 24	iP_Z	05 02 14	3			-2	9550	Dilatation
		iS_N	12 43	4	+2			85°8	H 04 49 37
		$iScS_E$	12 54	4		-4			
		eSS_E	18 27	15					
		eSS_N	18 30	15					
		eLQ_E	24.7	26					
		eL_Z	33.2	27					
		MNEZ	40.3	17	6	3	5		
56	" 24	iZ	18 28 11	3			+2		
		$i(S)_E$	34 27	5		-2			
		eL_E	40.1	29					
		[illegible]	[illegible]	30	4	3	3		

1951, January-February.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1951		h m s	s	μ	μ	μ	km.	
57	Jan.25	$(iP)_Z$	16 47 01	3			+2		Microseisms present.
		i_Z	51 15	3			+2		
		e_E	56 15						
		iS_E	56 23	5		+2			
		i_N	56 35	5	-4				
		$e(SKS)_E$	57 01						
		$e(SS)_E$	17 01 28						
		$e(SSS)_E$	04 42						
		eLR_E	09.5	30					
		eLR_Z	10.9	28					
		MEZ	16.3	20		11	16		
58	" 26	$(P)_Z$	03 33 05						Microseisms present.
		$e(S)_N$	39 16	10					
		e_E	42 08	11					
		$i(ScS)_{NE}$	42 34	5	+6	+6			
		eL_E	44.9	?					
		ME	51.2	19		5			
		MZ	53.6	19			7		
60	" 27	i_Z	11 27 41	3		+3			Microseisms present.
		i_E	31 00	7		+4			
		eL_E	31.7	18					
		MNEZ	33.0	13	2	4	1		
61	" 27	i_Z	11 35 14	3			-4		Superimposed on Coda of No.60
		i_{EZ}	41 17	3		+3	+2		
		i_E	42 11	4		-5			
		ME	47.1	13		2			
64	" 29	iP_Z	04 29 12	3			-2		Dilatation
		$i(PP)_Z$	30 31	3			-2		
		e_E	35 21						
		i_N	39 17	5	-5				
		i_Z	40 24	4			+5		
		i_N	40 27	4	+5				
		ME	42.5	12		2			
65	" 29	$e(PP)_E$	06 02 14						
		eLR_Z	33.5	26					
		MZ	41.7	19			2		
		ME	44.7	17	1				
67	" 30	iP_Z	11 23 05	3			-1	2500	Dilatation
		ipP_Z	23 18	3			-2	22°5	
		eS_N	27 06	7					
		iSS_N	27 41	5	+3				
		eLR_Z	28.5	24					
		MNE	30.4	15	1	1			
		MZ	30.7	17			1		
68	" 30	e_E	23 38.4						
		eL_E	00 09.0						
		MEZ	19.5	20		1	1		

Minor shocks: 3d 08.9h, 13.2h, 13.9h, 18.3h; 4d 18.1h, 22.6h; 8d 15.3h; 9d 09.4h; 12d 07.2h, 15.4h; 13d 19.7h; 14d 01.3h, 06.9h; 15d 11.7h, 15.0h; 16d 03.2h, 11.4h, 16.1h, 21.1h; 19d 10.6h; 21d 16.5h; 23d 09.7h; 24d 08.2h; 26d 17.1h; 28d 03.9h, 13.8h; 30d 08.7h; 31d 04.4h.

70	Feb. 2	i_Z	19 33 59	3			+2		Masked by microseisms.
		MNE	44.6	13	23	25			
		MZ	46.6	13			17		
71	" 7	iP_Z	00 11 56	3			+1	2400	Compression
		ipP_Z	12 05	4			+4	21°6	
		iS_E	15 48			+			
		i_N	15 53	7	+6				
		i_E	15 55	7		+4			
		$iPcP_Z$	15 58	6			+3		
		LQ_E	16.1	13					
		eLR_Z	17.2	21					
		MNEZ	18.2	18	1	2	2		
72	" 7	$i(P)_Z$	00 31 11	4			+2		Masked by Coda of No.71
		$e(S)_E$	35 27						
		eLR_Z	38.3	30					
		ME	40.8	14		1			
		MZ	41.1	18			3		
		MN	41.4	16	2				

1951, February.

RIVERVIEW COLLEGE OBSERVATORY,

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1951		h m s	s	μ	μ	μ	km.	
74	Feb. 8	ePZ	10 44 19						
		iPZ	44 24	3			+1		
		iPP$_E$	45 21	4		-1			
		iPPZ	45 24	4			-2		
		ePPPZ	45 35	4					
		e(S)$_N$	49 19	6					
		eLRZ	53.0	21					
		ME	55.4	16		12			
		MZ	55.6	18			16		
		MN	56.2	12	13				
76	" 9	iPZ	01 25 21	2			+2	3260	Compression
		iS$_E$	29 32	5		+1		29.3	H 01 20 07
		eE	32 22	10					Deep focus.
77	" 10	iPNEZ	03 32 46	3	+2	-5	+10	2520	Compression
		iZ	32 48	3			+5	22°6	H 03 27 47
		iE	32 51	4		+10			
		iE	33 08	5		+13			
		iN	33 09	5					
		iPPNEZ	33 14	4	-13	+23	-23		
		eS$_E$	36 47						
		iE	37 04	8		+16			
		eLRZ	38.4	28					
		MZ	41.0	16			48		
		ME	41.1	16		45			
		MN	41.3	13	24				
79	" 10	(iP)$_Z$	15 23 00	3			+3		Compression
		iZ	26 25	3			-5		
		iS$_E$	30 58	5		-3			
		eE	34 37						
		eL$_E$	41.3	19					
80	" 10	iPZ	21 59 05	3			+2	4070	Compression
		iS$_N$	22 04 45	7	-3			36.6	H 21 52 00
		eLR$_E$	09.0	?					
		ME	12.3	14		14			
		MN	13.4	12	9				
		MZ	14.0	15			14		
81	" 12	ePZ	17 35 50					11000	
		iSKS$_N$	46 18	4	+2			100°	
		iN	46 31	5	+4				
		iPS$_N$	48 50	4	+2				
		eSSS$_E$	58 01						
		eLQ$_E$	18 04.8	30					
		ME	13.3	22		2			
		MNEZ	19.7	18	2	2	3		
82	" 13	iPZ	00 56 26	3			+2	6600	Compression
		iS$_N$	01 04 31	5	+2			59°4	
		iS$_E$	04 32	5		+2			Microseisms pres-
		eE	08 10						ent.
		eLQ$_E$	11.2	19					
		MN	19.0	13	4				
		ME	22.2	13		2			
83	" 13	iPEZ	12 02 27	4		+7	-16	3900	Dilatation
		ipPZ	03 05	4			+8	35.1	h 200 km.
		iPPEZ	03 48	7		-12	+21		H 11 55 46
		iE	05 18	7		+14			Δ, h & H from
		iZ	05 20	7			+24		Gutenberg's
		iZ	05 33	7			+20		Tables.
		iSNE	07 43	8	+16	+12			
		iN	11 11	9	-26				
		iN	14 24	7	+33				

1951, February.

RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.) h m s	Per. s	Amplitude AN μ	AE μ	AZ μ	Δ km.	Remarks
	1951								
84	Feb. 13	ePZ	22 26 46					11300ca	H 22 12 54
		iPPZ	30 55	6			-5	102°ca	
		iSKSNE	37 21	7	+10	+4			
		iSN	38 22	7	+12				
		iSE	38 23	7		-20			
		iN	38 34	7	+6				
		isSE	38 40	9		-30			
		iE	44 47	10		-8			
		iSSE	45 10	12		+22			
		iE	45 30	8		+15			
		eLQN	53.8	30					
		eLRNE	59.3	30					
		MNEZ	23 07.0	20	13	43	51		
85	" 14	(iP)Z	21 17 11	4			+3		Perhaps only a microseism
		i(S)E	25 01	6		+2			
		MEZ	35.2	12		7	6		
		MN	35.7	10	8				
87	" 16	ePZ	19 12 41					2500	
		iPZ	12 47	6			-4	22°4	Dilatation
		iZ	13 01	4			+4		H 19 07 44
		iE	13 14	6		-3			
		iN	13 36	4	-4				
		iSN	16 40	4	+4				
		iN	16 45	4	+5				
		iE	16 47	6		-5			
		iZ	16 55	4			+6		
		iE	16 57	6		-8			
		iN	17 01	6	-12				
		MNEZ	21.0	13	7	6	7		
89	" 17	iPNZ	21 12 37	3	-4		+11	2960	Compression
		iNZ	12 41	3	+11		-17	26°7	h 200 km.
		ipPEZ	13 14	4		+3	+13		H 21 07 10
		ipPN	13 16	4	+41				Δ, h & H from
		iZ	13 23	4			+26		Gutenberg's
		iN	13 24	4	+43				Tables.
		iSE	17 00	6		-52			
		iN	17 04	5	+60				
		iZ	17 17	3			-33		
		iN	17 25	7	+115				
		isSE	18 01	7		+			
		iE	18 20	7		-79			
		iNZ	18 21	7	+160		-53		
		iE	18 32	7		-140			
91	" 20	i(S)E	00 13 21	4		+			From the Mainka
		i(sS)E	13 35	?		+			
		eLN	15.4	18					
		ME	17.9	9					
92	" 20	eE	10 27.7						
		iE	31 07	4		-3			
		iE	31 17	5		+5			
		eLE	32.9	22					
		iN	32 59	5	-5				
		MZ	36.6	18			5		
		ME	38.0	16		3			
		MN	41.9	15	4				
94	" 21	iPZ	07 24 57	4			+5	2550	Compression
		iSNE	29 00	6	-3	-3		22°9	
		iE	29 03	7		+8			
		iN	29 50	5	-4				
		eLRE	31.0	22					
		MEZ	33	20		6	9		
		MN	34.8	12	4				
95	" 22	iZ	01 53 30	4			-2		Masked by micro-
		e(S)E	57 16						seisms.
		e(S)N	57 17	11					
		eLE	02 01.1	31					
		ME	05.1	20		61			
		MNZ	09.1	14	17		30		

Minor shocks: 8d 04.2h, 12.7h; 10 d 11.6h; 16d 02.1h; 17d 19.7h, 22.6h; 20d 16.0h; 22d 12.9h, 17.7h, 18.8h; 23d 12.1h; 24d 12.6h; 25d 07.5h; 27d 13.2

1951, March.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1951		h m s	s	μ	μ	μ	km.	
103	Mar. 3	i_N	18 18 27	6	-4				Masked by micro-
		i_E	18 34	9		+4			seisms.
		eNE	18 44	19					
		eE	25 21	16					
		eL_Z	27.8	25					
104	" 4	$e(PS)_N$	11 46 36						
		$e(PS)_E$	46 41						
		$e(SS)_E$	52 49						
		eLR_Z	12 10.8	28					
107	" 5	iP_Z	20 22 19	4			+5	7430	Compression
		ipP_{NZ}	22 54	6	-6		+9	66°8	h 0.02
		iZ	23 10	5			-3		H 20 11 43
		iS_N	30 57	7	+10				
		i_N	31 39	7	+7				
		isS_N	32 04	7	-6				
109	" 8	iPP_Z	15 18 52	6			-6		P masked by micro-
		iS_N	22 42	6	+6				seisms.
		i_N	22 55	6	+				
		eL_E	24.8	25					
		eLR_Z	25.9	27					
		ME	27.1	16		8			
		MNZ	28.3	16	8		8		
110	" 9	iS_{NE}	16 19 31	4	-2				P masked by micro-
		$i(sS)_N$	22 45	6	-6				seisms.
111	" 9	iP_Z	19 51 15	3			-8	4000	Dilatation
		iP_{NE}	51 16	3	-4	+		36°0	H 19 44 15
		ipP_{NZ}	51 28	4	-5		+14		
		iPP_N	52 36	4	-6				
		$iPPP_Z$	52 55	6			+7		
		iS_N	56 51	6	-14				
		iS_E	56 52	6		-			
		i_N	56 57	6	-31				
		i_N	57 26		+				
		eNZ	57 38	24					
		iSS_{NE}	59 08	6	+12	-			
		i_N	59 19	8	+35				
		i_N	59 45	6	-19				
		eLR_N	20 00.9	35					
		MN	05.0	12	155				
		MZ	07.8	16			200		
114	" 10	iP_{NEZ}	22 02 34	7	-12	-17	+29	2720	Compression
		i_{NEZ}	02 39	7	+68	+60	-110	24°4	h 0.015
		ipP_{NE}	03 00	5	+	+			H 21 57 26
		iPP_N	03 19	6	-				After 22h 02m 39s
		iPP_E	03 20	6		-			readings from the
		iS_N	06 41	7	-				Wiechert.
		i_E	06 46	6		-			
		i_N	07 18	8	-				
		i_E	07 19	7		+			
		i_N	07 40	7	+				
		i_N	08 05	6	-				
		i_E	08 14	6		-			
115	" 12	iP_Z	15 04 40	3			-4	5160	Dilatation
		iS_E	14 52	6		-4		82°4	H 14 52 20
116	" 13	$(P)_Z$	17 50 14						
		iS_E	54 21	6		+2			
		i_N	57 27	6	-4				
		$iScS_{NE}$	59 46	5	+3	+4			
118	" 17	iP_Z	04 39 56	4			+2	9260	Compression
		iS_{NE}	50 12	6	+2	-3		83°1	H 04 27 27
		isS_N	50 28	6	+5				
		eL_E	05 06.0	21					
		ME	16.2	22		2			
		MNZ	20.2	18	2		2		
119	" 17	e_N	05 39 25	8					
		eLQ_N	46.0	24					
		eLR_Z	48.4	30					

1951, March.

RIVERVIEW COLLEGE OBSERVATORY
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.) h m s	Per. s	Amplitude A_N μ	A_E μ	A_Z μ	Δ km.	Remarks
	1951								
120	Mar.17	iPZ	10 01 22	5			-3	6430	Dilatation
		iS_N	09 17	6	+3			57.8	H 09 51 32
		iPS_E	09 35	7		-3			
		iPS_N	09 36	7	+4				
		eLR_{EZ}	17.9	28					
		MNEZ	25.0	16	3	2	2		
121	" 17	eZ	15 55 24						Masked by micro-seisms.
		$i(S)_N$	16 01 25						
		$i(S)_E$	01 26						
		eE	04 14						
		eL_E	08.9	25					
		MNEZ	14.7	19	5	5	6		
126	" 23	$(i)_Z$	00 41 32	4			-4		Masked by micro-seisms.
		$i(S)_E$	45 33	6		-2			
		iZ	46 45	4			-3		
		i_N	46 46	5	-4				
		i_E	46 54	5		-5			
		ME	47.9	7		9			
		MN	49.3	8	19				
127	" 23	iP_{EZ}	21 43 44	4		+4	-7	2800	Dilatation
		i_{EZ}	44 00	10		+15	-21	25°2	h 0.03
		ipP_Z	44 37	4			+8		H 21 38 44
		iPP_{EZ}	44 45	4		+32	-53		
		i_E	45 00	7		+36			
		i_N	45 21	6	+11				
		i_{EZ}	45 31	7		-28	+30		
		iS_E	47 58	7		-13			
		iS_N	48 00	7	-18				
		i_E	48 01	8		+67			
		iZ	48 04	8			+18		
		i_{NZ}	48 29	7	+34		+62		
		i_E	48 58	8		+30			
		i_N	48 59	7	-16				
		isS_{NE}	49 17	8	+50	-32			
		iSS_N	49 29	10	-270				
		i_E	49 40	10		-71			
		i_N	50 05	10	+130				
		MEZ	54.9	16		40	55		
128	" 24	iP_{NEZ}	00 23 10	3	-5	-3	+13	3040	Compression
		iZ	23 18	3			+9	27°3	h 0.02
		ipP_Z	23 42	3			-2		H 00 17 38
		iPP_Z	24 04	3			+5		
		iS_{NE}	27 36	7	-17	+4			
		i_N	27 53	7	+15				
		i_N	28 25	8	+10				
		i_E	28 48	7		-13			
		i_N	28 50	7	-10				
		iSS_Z	29 10	9			+17		
		i_N	29 26	7	+16				
		$iSSS_E$	29 30	7		+15			
		$iScS_N$	33 48	7	+19				
		$iScS_E$	33 49	7		+13			
132	" 26	iP_Z	00 35 31	2			-2		Dilatation
		eL_E	50.3	13					
135	" 27	$i(S)_E$	13 54 23	4		-3			Masked by micro-seisms.
		i_E	54 32	5		-3			
		i_N	54 34	4	+5				
		eL_Z	56.5						
136	" 28	iE_Z	02 01 16	7		+13	-8		Masked by micro-seisms.
		i_E	03 10	8		+8			
		i_N	03 11	7	-12				
		i_Z	03 17	7			+12		
137	" 28	iP_Z	10 08 08	6			+6	2400	Compression
		$ePPP_Z$	08 40	10				21°6	H 10 03 19
		eS_E	12 00	10					
		eLR_E	13.6	24					
		MNEZ	16.0	15	4	3	4		

Minor shocks: 5d 18.5h, 18.9h; 8d 06.3h; 9d 23.6h; 10d 12.5h; 18d 09.6h, 12.6 22d 11.1h, 19.9h; 24d 21.8h; 25d 07.1h, 18.7h; 26d 19.9h, 20.5h; 28d 10.8h, 17.5h, 20.8h; 31d 02.4h.

D.J.K.O'Connell,S.J.
Director.

T.N.Burke-Gaffney,S.J.
P.F.Rheinberger.

No. 2 1951, 2nd Quarter.

Riverview College Observatory

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN

$\Phi = 33° 49' 46''$ S. $\lambda = 151° 9' 30''$ E. h = 25m. Foundation : Triassic Sandstone.

INSTRUMENTS :

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS, EW)
2. Wiechert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.) (NS, EW)
4. Gailitzin Aperiodic Seismometer with Galvanometer registration (NS, EW, Vert)

		V	T_o	$\epsilon : 1$	$\frac{r}{T_o^2}$		T_1 (Galv.)	T (Pend)	μ^2	V_8	
N	1	205	7.5	6.1	0.002	4	11.8	12.2	-0.02	450	To May 4.
	3	173	9.2	5.1	0.019		11.7	11.7	-0.02	700	To June 7.
E	1	222	6.9	4.7	0.002	4	12.3	12.5	-0.02	530	
	3	149	10.5	6.5	0.011						
Z	2					4	10.9	10.8	-0.03	460	

No.	Date	Phase	Time (G.M.T.)	Per	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1951		h. m. s.	s.	μ	μ	μ	km.	
143	Apr. 2	e(PS)E	00 43 52						
		MEZ	01 19	17		2	1		
145	" 2	iPNZ	22 15 23	4	-5		+7	3100	Compression.
		iNZ	15 51	4	-4		+8	27°.9	
		iPPN	16 11	5	+6				H 22 09 31
		iZ	16 36	5			-5		
		iSN	20 01	6	-11				
		iN	20 41	7	+13				
		iZ	20 43	6			+10		
		iSSE	21 30	5		+13			
		iEZ	22 02	6		-15	-11		
		iN	22 25	6	-15				
		eLRE	22.7	31					
		iN	23 45	4	+13				
		iN	24 29	5	-17				
		MNEZ	26.5	15	15	26	15		
146	" 4	eE	17 23 17						
		iE	26 14	7		+3			
147	" 7	iPZ	09 33 04	4			-2	2860	Dilatation
		eSNE	37 29					25°.8	
		iN	38 04	7	+5				H 09 27 34
		iE	38 21	7		+4			
		eLE	40.2						
148	" 8	(eP)Z	04 42 19						
		e(S)E	46 56						
		MNE	53.4	12	3	3			
151	" 10	iPEZ	11 02 51	4		-	+3	4100	Compression.
		iPPEZ	04 13	4		+	+2	37°	
		iPPPNEZ	04 37	5	-2	-9	+12		
		eLQN	11.3	26					
		iN	11 42	7	-4				
		eLRZ	13.1	28					
		MEZ	16.0	17		5	5		
		MN	16.5	13	4				
154	" 13	iPZ	10 21 59	?			-	4230	Dilatation
		iEZ	22 14	3		+5	+4	38°.0	
		iPPZ	23 28	4&8			+9		H 10 14 42
		iPPE	23 29	4&8		+6			
		iZ	23 41	4			+6		
		iE	23 42	4		+5			
		iSN	27 49	8	+6				
		iSE	27 51	8		+15			
		iSSZ	30 30	10			+14		
		iNE	30 32	7	+14	+4			
		iSSSE	31 01	10		+14			
		eLRE	34.5	28					
		MNEZ	39.2	16	41	30	55		

1951, April.
RIVERVIEW COLLEGE OBSERVATORY.
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.) h m s	Per. s	Amplitude A_N μ	A_E μ	A_Z μ	Δ km.	Remarks
	1951								
155	Apr.14	$(P)_Z$	00 59 44					12200ca	h 0.03
		iPP_Z	01 04 24	5			-7	112°ca	
		$eSKS_N$	09 56						
		eS_E	11 36						
		iPS_{NZ}	13 59	7	+1		-5		
		iPS_E	14 03	8		+9			
		i_E	14 12	6		+3			
		$iPPS_E$	15 03	8		-5			
156	" 14	iP_Z	05 46 10	3			-2	2520	Dilatation
		iS_E	50 13	8		+3		22°9	H 05 41 08
		i_N	50 24	6	-4				
		i_E	51 35	8		+7			
		eLR_Z	51.7	22					
		ME	53.8	10		7			
157	" 14	eP_Z	13 46 32					10600	H 13 33 07
		eS_E	57 45	7				96°1	
		i_E	14 02 44	9		+3			
		e_E	04 04	15					
		eLQ_E	12.9	25					
		eLR_Z	16.7	?					
		$MNEZ$	25	22	3	5	9		
158	" 14	iP_Z	23 53 18	5			+4	9200	Compression
		iS_E	00 03 36	10		-4		83°5	H 23 40 52
		eLR_Z	20.6	30					
		ME	33.6	21		3			
161	" 16	iS_E	20 11 02	5		+5			P obscured by microseisms. h about 500 km.
		$i(ScS)_N$	12 08	4	+3				
		i_E	12 11	7		-3			
		$i(sS)_E$	13 57	8		+6			
		$i(SS)_E$	15 20	6		+4			
165	" 20	i_Z	21 11 45	4			+2		Masked by microseisms.
		i_Z	11 51	4			+4		
		$i(S)_E$	15 09	7		+3			
166	" 21	iP_Z	17 06 22	3			+2	3100	Compression
		i_Z	07 24	3			-2	27°8	H 17 00 39
		eS_N	10 57						
		i_N	11 12	5	+5				
		ME	16.5	14		2			
		MZ	17.4	15			4		
170	" 23	iP_Z	01 04 05	5			-4		Dilatation
		e_E	14 04						
172	" 23	iP_{NEZ}	06 55 14	4	+3	-7	+15	2530	Compression
		iE_Z	55 30	6		+6	-16	22°7	h 0.01
		ipP_E	55 35	4		-7			H 06 50 20
		iPP_{EZ}	55 47	4		-4	+12		
		i_N	55 49	4	-6				Gutenberg's Tables give: 2460 km.,22°1, h 100 km., H 06 50 25
		$e(S)_E$	59 11						
		i_N	59 20	5	+2				
		i_N	59 28	6	+5				
		$i(sS)_{EZ}$	59 45	7		+8	+7		
		i_Z	07 00 08	7			+8		
		i_E	00 35	10		-32			
		i_N	00 41	7	+22				
		eLR_Z	01.1	24					
		MZ	02.7	16			14		
		ME	04.0	16		10			
173	" 23	$i(P)_Z$	12 05 27	4			-2		Dilatation
		i_Z	05 50	4			-2		
		$e(S)_N$	11 41	8					
		$e(S)_E$	11 42	8					
		$e(SS)_{EZ}$	14 43	13					
		i_{NE}	15 04	6	+2	-2			
		MZ	22.5	27			3		
		ME	22.7	24		1			
176	" 28	$e(S)_E$	21 30 22						
		e_Z	30 46	16					
		e_E	31 33	15					
		eL_E	33.8	21					
		MEZ	36.3	19		8	9		

1951, April-May.

RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	TIME (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1951		h m s	s	μ	μ	μ	km.	
178	Apr.29	iP_Z	10 19 22	4			+2	3200	Compression
		i_Z	21 07	4			+2	28°8	H 10 14 00, h 500
		iS_E	23 37	6		+2			Δ, H & h from
		$iScS_E$	29 01	4		+2			Gutenberg's Tables
179	" 29	iP_Z	19 43 06	2			-2		Dilatation
		i_Z	44 49	2			-3		Perhaps deep.
		i_E	52 43	8		-2			
180	" 30	iP_Z	15 33 34	6			+7	2800	Compression
		$iPNEZ$	33 37	5	+	+2	-16	26°8	H 15 27 54
		i_Z	33 44	4			-28		
		i_Z	33 49	4			+37		
		iPP_Z	34 18	5			+		
		$iPPP_N$	34 31	5	+				
		iS_{NE}	38 06	8	+	+23			
		i_N	38 18	7	+				
		i_Z	38 21	9			-81		
		i_N	38 24	7	+				
		i_E	38 36	10		+88			
		i_E	38 47	10		+40			
		eLR_Z	40.4	30					
		ME	43.0	13		225			
		MNZ	43.2	15	240		210		MN from Wiechert
		ME	44.7	10		190			

Minor shocks: 1d 21.5h; 2d 02.0h; 8d 13.2h, 22.7h; 10d 14.0h; 12d 11.5h; 16d 05.3h, 07.1h; 17d 11.3h; 18d 01.3h; 20d 00.2h; 22d 02.3h, 06.3h, 08.8h; 23d 06.8h; 25d 05.4h; 28d 09.0h, 22.6h.

181	May 1	iP_{NZ}	05 06 34	3			-19	1950	Dilatation
		i_{NZ}	06 36	3			-	17°5	H 05 02 31
		i_N	06 41	5					
		iPP_{EZ}	06 49	4		+30	+105		
		i_Z	07 12	5			+75		
		iS_E	09 46	4		+25			
		eLQ_N	09 50	15					
		i_E	09 52	4		-130			
		iSS_Z	10 03	10			+220		
		iSS_N	10 07	7	-180				
		i_E	10 18	?					
		$iSSS_N$	10 25	5	-				
		ME	11.1	15		750			ME, MN from
		MN	11.3	13	1300				Wiechert.
		MZ	11.9	17			320		
		eW_2E	08 12.6	24					
184	" 2	eP_Z	16 26 37					6050	H 16 17 04
		eS_N	34 17					55°3	
		i_E	34 27			+			
		iPS_N	34 31	7	+4				
		e_N	34 42						
		i_E	34 43	8		+			
		SS_E	38 05	18					
		eLR_Z	43.4	30					
		MN	44.6	20					
		ME	45.9	19		40			
		MZ	47.0	18			38		
186	" 4	iP_Z	12 04 49	3			-2	8700	Dilatation
		ipP_Z	05 46	4			+2	78°3	H 11 53 12
		$eSKS_E$	14 44						h 0.03
		$ePPS_E$	16 02						
188	" 5	e_N	03 40.1						
		e_E	41 42	12					
		eL_E	43.4	20					
		ME	46.1	15		4			
		MN	48.9	13	2				
		MZ	49.1	15			3		
196	" 13	$i(P)_Z$	12 19 31	3			+2		Compression
		$i(S)_{NE}$	23 06	10	+2	+2			
		eL_{EZ}	24.9	24					

RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1951		h m s	s	μ	μ	μ	km.	
197	May 13	iP_Z	17 07 07	3			+2	2840	Compression
		iPP_Z	07 35	3			+2	25°5	H 17 01 59
		$iPPP_Z$	07 46	7			-6		
		i_N	08 24	5	+5				
		i_N	08 31	4	+4				
		iS_E	11 15	6		+3			
		i_E	11 18	7		-9			
		i_Z	11 21	8			-8		
		i_N	11 23	8	+8				
		isS_E	11 30	8		-7			
		eLR_{EZ}	13.0	22					
		MZ	15.9	16			5		
		MNE	16.3	12	3	3			
198	" 14	iP_Z	04 03 09	4			+3	2620	Compression
		i_Z	03 22	4			+7	23°6	H 03 58 00
		iS_E	07 18	8		+4			
		eLR_Z	08.6	27					
		ME	09.4	22		7			
		MZ	09.7	21			10		
		MN	11.6	13	3				
202	" 15	$e(S)_E$	04 40 05	10					Masked by large
		eL_{EZ}	42.0	22					microseisms.
203	" 15	$(i)_Z$	11 27 27	4			+2		Masked by large
		i_N	33 12	7	-7				microseisms.
		eL_E	37.0						
		ME	39.6	14		8			
		MNZ	40.3	16	12		15		
206	" 16	iP_Z	14 14 12	3			-3	4740	Dilatation
		$ePPP_Z$	16 25	7				42°6	H 14 06 17
		iS_N	20 32	6	-3				
		$i(ScS)_E$	23 56	6		-6			
		$i(ScS)_N$	23 58	6	+5				
		i_E	27 09	6		-5			
		eL_E	30.2	22					
		MNEZ	34.8	18	8	5	7		
207	" 17	iP_Z	01 46 54	4			-4	2400	Dilatation
		iPP_{NE}	47 19	5	+3	+3		21°6	H 01 42 05
		$iPPP_E$	47 27	5		+5			
		iS_E	50 46	6		+5			
		$iPcP_{NE}$	50 55	6	+6	+11			
		i_E	51 25	6		+10			
		$iSSS_N$	51 37	6	-2				
		eL_E	52.2	22					
		MN	55.0	13	4				
		MZ	55.4	14			3		
		ME	55.8	15		4			
		i_E	58 35	6		-5			
213	" 20	iP_Z	07 16 12	3			+2	4780	Compression
		i_Z	16 42	3			+1	43°0	H 07 08 27
		i_N	18 04	4	+2				h 0.02
		iS_N	22 25	6	-4				
		i_N	23 17	4	+2				
		$iScS_{NE}$	25 50	6	+3	-4			
214	" 20	$iSKS_E$	14 56 20	6		+3			
		eSS_E	15 04 22						
		eLR_Z	19.2	21					
		MEZ	28.0	17		1	2		
216	" 20	iP_Z	19 07 19	3			-2	5320	Dilatation
		i_E	07 21	3		+2		47°9	H 18 58 42
		iS_N	14 13	7	+3				
		i_E	14 21	6		+3			
		eL_N	20.5	22					
		ME	24.2	12		11			
		MZ	24.3	12			13		
		MN	24.6	12	19				

1951, May-June.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1951		h m s	s	μ	μ	μ	km.	
219	May 21	iP_{NZ}	08 33 04	6	-3		+5	3110	Compression
		i_{NZ}	33 07	4	+8		-14	28.0	H 08 27 26
		ipP_Z	33 34	4			+6		h 0.02
		i_{NZ}	33 51	7	-16		+25		
		i_N	34 05	6	-10				
		iS_N	37 35	9	-30				
		eZ	37 45	21					
		i_N	37 52	9	-47				
		isS_N	38 38	8	+11				
		i_E	38 50	7		-27			
		i_N	38 57	7	-37				
		i_E	39 08	7		+18			
		eL_N	39.9	26					
		MNEZ	43.6	15	36	42	35		
221	" 23	eZ	06 55 31						
		$i(S)_{NE}$	59 55	6	+2	+2			
		i_E	07 01 11	5		+3			
		i_N	01 12	5	-3				
		i_E	02 51	5		+3			
		eL_N	06.3	24					
		MN	11.0	16	4				
		MZ	12.3	13			4		
222	" 28		15 44						Felt in Gippsland, Southern Victoria.
225	" 28	iPZ	20 01 55	4			-6	2500	Dilatation
		iP_{NE}	01 56	4	+2	+3		22°5	H 19 57 14
		ipP_Z	02 37	4			+7		h 0.03
		i_E	02 46	5		-6			
		iS_{NE}	05 42	4	-4	+6			
		i_{NE}	05 50	4	+10	+8			
		i_N	06 20	6	+4				
		isS_E	06 44	5		+4			
		i_N	06 59	5	+8				
		i_N	07 17	5	+8				
		$iScS_E$	12 45	5		+5			
226	" 29	iP_Z	06 09 44				-	3640	Dilatation
		i_N	09 46		+			32°7	H 06 03 13
		iPP_{NZ}	11 03	7	-10		+9		
		iS_N	14 57		-				
		eLQ_N	17.1	45					
		ME	20.7	5		92			
		MN	23.6	10	125				
		MZ	23.8	12			140		
227	" 30	$i(S)_N$	19 19 05	7	-2				
		eL_N	22.8	21					
		MNEZ	25.5	14	2		2		
228	" 30	iP_{NEZ}	20 04 25	5	-2	+	+5	4360	Compression
		ipP_Z	04 36	5			+5	39°2	H 19 56 58
		i_N	05 51	5	+4				
		iPP_N	06 02	6	+5				
		i_Z	06 04	7			+16		
		$iPPP_{NZ}$	06 23	5	+6		-7		
		iS_N	10 23	8	+4				
		iSS_Z	13 07	13			-18		
		i_N	13 30	9	-12				
		i_N	14 21	6	+10				
		eL_Z	17.8	30					
		MNE	18.3	15	17				
		MZ	21.2	18			18		
229	" 31	iP_{NEZ}	21 05 56	4	-3	+	+13	6550	Compression
		i_Z	06 21	6			+6	59°6	H 20 55 53
		$iPcP_Z$	06 45	4			+4		
		eS_N	14 02						
		$iScS_N$	15 46	4	-3				
		MN	29.6	24	11				

Minor shocks: 1d 09.6h,22.1h; 4d 10.7h, 18.2h; 5d 04.8h; 6d 23.8h; 7d 00.1h; 8d 21.0h; 9d 11.5h; 10d 10.1h; 13d 09.6h; 14d 05.1h, 23.3h; 15d 01.3h, 18.3h, 23.1h; 17d 12.7h, 17.6h; 18d 07.0h; 19d 01.8h; 20d 01.0h, 17.1h; 21d 02.8h, 05.0h, 16.2h; 23d 19.8h; 24d 08.6h

1951, June.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.) h m s	Per. s	Amplitude A_N μ	A_E μ	A_Z μ	Δ km.	Remarks
	1951								
230	June 1	iP_Z	16 32 19	3			-3		Dilatation
		eLR_Z	46.1	22					
		MN	49.8	15	1				
		MZ	51.7	18			1		
231	" 2	iPZ	06 57 05	3			-1	5850	Dilatation
		i_Z	57 09	3			+4	52°7	H 06 47 52
		i_N	57 11	3	+2				
		i_Z	58 43	5			+3		
		i_Z	59 55	7			-4		
		iS_N	07 04 29	6	-5				
		i_E	04 31	?		+			
		i_N	04 40	5	+4				
		eN	09.5	16					
		eL_N	14.4	30					
		MZ	22.3	20			6		
		MN	25.0	20	9				
234	" 3	i	08 52 22	½					Very small local shock.
236	" 4		16 26						Felt in Gippsland, Southern Victoria.
239	" 5	iPZ	17 08 26	3			-2	7470	Dilatation
		ipPZ	08 36	4			-3	67°4	H 16 57 33
		iN	08 40	4	+3				
		iNZ	09 23	6	+4		-12		
		eS_E	17 19	11					
		isS_{NE}	17 36	9	-5	-13			
		i_E	18 31	10		+10			
		i_N	18 48	6	-5				
		i_E	18 50	7		-11			
		$e(L)_E$	24.8	28					
		ME	33.8	19		11			
		MNZ	40	18	10		16		
		eW_2Z	19 30	21					
241	" 6	i_Z	16 30 57	4			-2		
		i_Z	33 08	4			+2		
		i_Z	34 15	4			-2		
		e_Z	41 22	15					
		e_Z	50 55	15					
		eLQ_E	17 10.0	28					
		eLRZ	17.4	26					
		MZ	24.1	25			3		
		MN	28.2	22	2				
		ME	34.6	21		3			
242	" 7	$i(P)_Z$	11 36 43	4			+6		Compression
		eL_E	46.3	36					Masked by large
		ME	50.3	19		20			microseisms.
		MNEZ	53.0	15	14	15	18		
243	" 7	$(iP)_Z$	23 05 02	3			-3		Dilatation
		i_Z	05 36	4			+7		Masked by very
		i_{EZ}	05 45	5		-4	+9		large microseisms
		i_Z	06 10	6			+10		
		i_N	06 16	6	+5				
		i_N	09 44	7	+7				
		i_E	09 45	8		+9			
		i_E	10 27	10		+11			
		eL_N	12.4	18					
		i_N	13 58	9	-34				
		MEZ	16.0	18		36	38		
		MNEZ	17.6	14	24	35	40		
246	" 12	P_Z	07 56 00	3				3520	
		iS_E	08 01 06	7		-6		31°7	
		eLR_Z	04.4	28					
		MZ	06.5	19			10		
		ME	06.8	19		7			
250	" 20	i_Z	22 51 17						Masked by micro-
		$e(S)_E$	58 05						seisms.
		eL_E	23 04.4	22					
		MEZ	08.3	16		12	11		

1951, June.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date.	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1951		h m s	s	μ	μ	μ	km.	
251	June 20	$(i)_Z$	23 54 11	4					Masked by large microseisms.
		$e(S)_E$	00 01 23						
		iE	01 36	4		-6			
		e_E	05.4	21					
		eL_E	08.1	21					
		MEZ	11.6	16		12	8		
255	" 23	eZ	13 43 03						
		iE	46 31	5		+2			
		eL_E	48.4	20					
256	" 24	$iPEZ$	04 46 30	3&8		+4	-5	2380	Dilatation
		ipP_{NEZ}	46 46	6	-	+15	-12	21°5	h 0.005 ca
		iPP_{NZ}	46 56	6	+		+17		H 04 41 45
		$iPPE$	46 57	6		-20			
		eS_E	50 19	8					
		iN	50 21	6	+				
		iZ	50 29	7			+8		
		iE	50 35	5		+3			
		isS_E	50 47	7&15		+12			
		iZ	50 54	7			-13		
		iE	51 02	7&15		+15			
		iN	51 35	7	+				
		eL_E	52.0	25					
		iN	52 53	5	+				
		MNE	54.6	10		6			
		MZ	55.6	15			5		
257	" 24	eS_E	11 12 27	12					
		$i(ScS)_E$	14 50	5		-2			
		iE	15 03	6		-2			
		eL_Z	19.6	25					
		MZ	25.9	15			2		
		ME	26.5	16		5			
258	" 24	iP_{NZ}	16 55 12	4	-		+6	3260	Compression
		$ePPPZ$	56 18	10				29°4	H 16 49 10
		iS_E	17 00 02			-			
		iN	00 12		+				
		eL_{QE}	01.4	25					
		eLR_{EZ}	03.1	26					
		ME	05.0	13		11			
260	" 25	$e(SKS)_E$	05 47 34						
		eLR_Z	06 01.3	33					
261	" 25	eP_Z	15 49 41					3460	
		iPP_{NZ}	50 45	5	-		+2	31°1	H 15 43 24
		eS_E	54 43	8					
		iS_N	54 45		+				
		eZ	55.0	22					
		iSS_N	56 19		+				
		iE	56 27	6		-2			
		iE	57 22	6		-			
		eL_E	58.0	25					
		M	16 02.3	16		37	17		
262	" 25	$iPEZ$	18 39 05	6		-2	+4	2500	Compression
		$iPPE$	39 31	5		+2		22°5	H 18 34 07
		iS_E	43 05	7		-4			
		eL_E	45.2	19					
		MZ	46.6	16			2		
		ME	46.7	16		4			
263	" 25	iZ	18 51 25	4			+3		Superimposed on Coda of No.262
		iE	52 52	4		-2			
265	" 26	$i(P)_Z$	03 48 28				+		Compression
		$i(S)_E$	54 30	7		+5			Masked by micro-seisms.
		iZ	57 14				-		
		eLR_E	59.8	33					
		MNE	04 03.0	20		21			
		MZ	07.1	15			15		

Minor shocks: 2d 14.1h, 17.4h; 3d 17.4h; 5d 01.2h, 15.8h; 6d 04.8h; 8d 22.6h; 12d 03.4h; 15d 20.4h; 17d 09.1h; 18d 17.3h; 21d 01.4h, 07h; 22d 08.7h; 25d 04.3h, 20.8h; 30d 17.4h.

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RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN

$\Phi = 33° 49' 46''$ S $\lambda = 151° 9' 30''$ E. h = 25m. Foundation : Triassic Sandstone.

INSTRUMENTS :

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS, EW)
2. Wiechert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.) (NS, EW)
4. Gailitzin Aperiodic Seismometer with Galvanometer registration (NS, EW, Vert)

		V	T_o	$\epsilon : 1$	$\frac{r}{T_o^2}$		T_1 (Galv.)	T (Pend)	μ^2	V_s	
N	1	207	7.3	6.0	0.003	4	12.0	12.1	+0.03	540	From June 8
	3	164	9.1	3.9	0.021						
E	1	220	6.9	4.3	0.014	4	12.3	12.5	-0.02	530	
	3	144	10.7	4.9	0.011						
Z	2					4	10.9	10.8	-0.02	460	

No.	Date	Phase	Time (G.M.T.)	Per	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1951		h. m. s.	s.	μ	μ	μ	km.	
267	July 1	i(SS)$_{NE}$	18 16 16	10	-6	-3			
		eLRZ	18.9	25					
		MEZ	24.3	16		2	2		
268	" 2	iZ	05 15 25	5			+5		
		e(S)$_N$	21 33	12					
		iE	24 37	6		-4			
		iE	24 57	6		+3			
		iNE	25 21	6	+4	+3			
		MNEZ	36.2	21	6	3	6		
269	" 2	i$_N$	08 04 55	5	+3				Masked by micro-seisms.
		i$_N$	07 55	4	+4				
		eL$_E$	09.9	20					
270	" ~~2~~ 2	iZ	21 54 18	5			+4		
		i(SS)$_E$	59 46						
		eL$_N$	22 00.8	23					
		MNEZ	04.2	16	8	15	17		
271	" 3	i(P)$_Z$	08 55 28	4			-4		Dilatation
		iZ	56 28	4			+6		
		i(S)$_N$	09 00 42	8	-7				
		eE	01 05						
		e(SS)$_N$	02 45						
		e(SSS)$_E$	03 05						
		iN	03 13						
		eL$_N$	05.8	30					
		MNE	08.1	16	17	14			
274	" 7	iP$_{NEZ}$	10 19 14	5	-3	+3	-11	2040	Dilatation
		ipPZ	19 22	?			+	18°.4	H 10 15 00
		iS$_{NEZ}$	22 35	7	+4	+6	+8		
		eSS$_E$	22 59	11					
		iN	23 02	11	+6				
		eLZ	23.3	21					
275	" ~~6~~ 6	iPZ	05 53 25	6			+6	5780	Compression
		iP$_{NE}$	53 26	6	-3	+3		52°.0	H 05 44 17
		ipPZ	53 35	5			-4		
		iN	53 38	7	-10				
		iPPZ	55 20	9			+7		
		iPP$_E$	55 22	10		+5			
		iN	55 29	12	+10				
		iN	56 08	7	+10				
		iS$_N$	06 00 45	9	-8				
		iE	00 51	7		+4			
		iPS$_N$	00 59	7	-24				
		iSS$_E$	04 22	9		+7			
		iSS$_N$	04 23	9	-13				
		iE	04 38	10		+14			
		iN	04 58	7	-11				
		ME	11.3	15		22			
		eL$_N$	11.5	36					
		MNZ	17.8	18	33		28		

1951, July.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.) h m s	Per. s	Amplitude A_N μ	A_E μ	A_Z μ	Δ Km.	Remarks
	1951								
276	July 10	iZ	05 41 19	3			+2		
		iE	45 42	6		+4			
		ME	52.0	12		4			
277	" 11	iPZ	18 31(32)	5			-5	7000	Dilatation
		ipPZ	33 12	4			+3	63°1	h 0.07
		iPPNZ	34 05	7	+6		-12		H 18 21 50
		iNZ	34 12	6	+4		-9		
		iSNEZ	39 25	6	+12	+3	+6		Gutenberg's
		iNZ	39 41	6	+5		-6		Tables give;
		iE	39 48	5		+11			Δ 7110 km,64°0,
		iNZ	40 01	6	-10		+6		h 500 km.,
		iE	40 42	6		+5			H 18 21 59
		iE	41 05	5		+8			
		isSE	42 21	10		-21			P begins under
		iN	42 26	7	-7				paper clip.
		iE	42 35	8		+36			
		iN	42 43	7	-15				
		iZ	42 44	8			-9		
		iN	42 54	9	+20				
		eN	43 00	20					
		eSSN	43 49	18					
		iE	44 03	12		+22			
		eGE	48.5	33					
278	" 12	i(P)Z	00 34 33	4			+4		Compression
		ME	50.4	20		2			
		MN	54.1	18	1				
279	" 13	iPNZ	19 59 43	4	+3		-1	3010	Dilatation
		ipPZ	59 54	4			+11	27°2	H 19 54 00
		iNZ	20 00 22	6	-6		+6		
		iSE	04 18	5		-5			
		isSNE	04 35	8	+14	+5			
		iZ	04 40	7			+9		
		eEZ	04.8	25					
		iSSN	05 38	7	+23				
		MNEZ	09.4	21	51	34	28		
		ME	10.5	17		39			
		MZ	11.7	15			19		
		MN	12.9	14	25				
282	" 16	iPZ	10 46 05	4			+3	3080	Compression
		ipPZ	46 43	4			-6	27°7	h 0.03
		ipPN	46 44	4	+6				H 10 40 35
		iNZ	46 58	4	-7		+10		
		iPPN	47 03	5	+13				
		iPPZ	47 05	5			-9		Gutenberg's
		iPPPN	47 17	5	+15				Tables give:
		iPcPZ	49 21	2			+4		Δ 3000 km, 27°0,
		iSN	50 29	5	-14				h 200 km.ca.,
		iN	50 57	8	+24				H 10 40 32
		isSN	51 42	11	+63				
		iZ	51 43	8			-21		
		iSSN	52 16	7	+12				
		iE	52 26	10		-74			
		iE	52 56	8		+26			
		iN	53 04	9	-42				
		iE	53 28	9		+44			
		iE	53 56	9		-19			
		iN	54 03	10	-44				
		iE	54 25	6		-18			
		iE	54 36	6		+			
		eNE	54.8	21					
		iE	55 21	6		-70			
		iE	56 24	13		-97			
		iE	57 33	7		-78			
		MN	58.5	10	25				
		ME	58,7	10		35			
		MZ	11 02.0	11			38		

1951, July-August.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remarks.
	1951		h m s	s	μ	μ	μ	km.	
283	July 17	iPNEZ	14 53 51	4	+8	+7	-14	2760	Dilatation
		ipPNEZ	54 27	4	-7	+6	-14	24°8	h 0.02
		iPPZ	54 34	4			+5		H 14 48 42
		iNE	54 42	4	+4	-7			
		iPPPZ	54 46	6			+14		
		iS_N	57 59	6	-16				
		iZ	58 53	5			-12		
		iE	58 54	6		+9			
		isS_N	58 58	6	+6				
		iE	59 01	5		+14			
		iSS_N	59 11	6	+9				
		$i(ScS)_E$	15 04 46	5		+5			
284	" 18	iPKPZ	09 25 55	5			+4		Compression
		iZ	26 22	6			-12		
		iNZ	26 39	6	+6		+14		
		iE	26 51	6		+4			
		iN	27 00	6	+9				
		$i(SS)_E$	48 09	12		+10			
		eE	48 35	18					
		$e(SSS)_E$	53 21	22					
		eLQ_E	10 07.0	55					
		eLR_Z	16.0	30					
		MNEZ	23.1	20	21	13	24		
293	" 27	$i(P)_Z$	00 11 51	3			+2		Compression
		$i(S)_N$	16 00	5	-3				
		$i(S)_{EZ}$	16 01	4		-3	+3		
		$i(SSS)_N$	17 02	6	+3				
		MN	20.2	7	2				
		$i(ScS)_E$	23 02	5		-3			
297	" 29	iPZ	23 39 38	4			+1	3950	Compression
		iS_E	45 11	7		+10		35°5	H 23 32 42
		iSS_E	47 30	7		-6			
		iN	47 37	6	-11				
		iE	47 47	7		+14			
		iZ	47 48	7			-13		
		iN	47 53	6	-11				
		eLR_N	49.4	30					
		MNE	52.3	19	40	37			
298	" 30	iPZ	04 23 03	3			+4	6290	Compression
		iS_N	30 51	8	-8			56°5	H 04 13 22
		iS_E	30 53	6		-4			
		$iScS_N$	32 44	4	-4				
300	" 31	$i(P)_Z$	13 36 36	3			-3		Dilatation
		$i(S)_N$	42 59	4	+2				
		iN	43 41	6	-3				
		$i(SS)_N$	46 13	6	+3				
		iE	46 50	8		+4			
		MN	52.4	13	2				

Minor shocks: 4d 07.4h; 6d 05.3h; 14d 06.8h, 07.6h; 18d 07.0h; 19d 19.9h, 21.7
22d 17.0h; 23d 19.5h; 24d 01.9h; 26d 06.9h, 10.6h; 27d 00.8h; 28d 22.7h;
29d 05.9h; 31d 10.1h.

301	Aug. 2	iPNZ	03 45 54	4	+3		-4	3250	Dilatation
		iN	47 11	4	+4			29°3	h 500 km.
		ipPNZ	47 17	5	+7		-12		H 03 40 27
		iZ	47 22	4			-13		
		isPZ	48 18	4			+5		Δ, h & H from
		iS_{NZ}	50 12	4	+26	+7			Gutenberg's
		iS_E	50 13	4		+8			Tables.
		iN	50 17	4	-24				
		iN	50 29	?	+				
		iE	51 04	5		-8			
		iN	51 05	5	+4				
		isS_E	52 49	4		-5			
		iSS_N	52 57	7	+28				
		iSS_E	52 58	6		+10			
		iE	53 09	5		-10			
		iN	53 13	8	+23				
		iN	54 26	7	-16				
		iE	54 42	6		+7			
		$iScS_E$	55 25	5		+7			
		iE	55 55	5		-13			

1951, August.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1951		h m s	s	μ	μ	μ	km.	
302	Aug. 2	ePZ	10 26 57					7650	H 10 15 54
		$iPcPZ$	27 22	4			+4	68°8	
		$iPPZ$	29 29	4			+5		
		eS_N	35 57	10					
		esS_N	36 14	13					
		iPS_E	36 22	13		+11			
		eLQ_E	44.6	24					
		$eLRZ$	47.0	31					
		$MNEZ$	50.1	19	17	15	27		
308	" 6	iP_Z	15 16 34	3			+3		Compression.
		iZ	17 15	4			+7		
		i_N	20 59	7	+5				
		$i(S)_E$	21 07	7		+5			
		i_N	21 29	8	+4				
		iZ	21 34	13			+27		
		eL_Z	24.1	30					
		MZ	26.0	20			29		
		ME	27.1	12		20			
		MN	28.5	17	28				
311	" 12	$i(S)_N$	21 21 40	?	+				
		eL_EZ	26.2	25					
		$i(ScS)_E$	27 45	4		-13			
		ME	30.2	16		25			
312	" 13	iE	18 56 13	6		+4			
		iZ	56 15	6			-10		
		$eSKS_E$	59 41						
		iE	59 53	6		-3			
		$iPPS_E$	19 06 53	8		+4			
		$eSSS_E$	17 12	13					
		eLQ_N	28.9	38					
		eLR_NZ	37.8	40					
		$MNEZ$	46.4	22	32	43	56		
		$MNEZ$	51.0	19	45	50	65		
315	" 17	$i(S)_N$	06 02 51	6	-3				
		eL_Z	05.6	27					
316	" 18	iP_Z	03 46 00	3			+3	4600	Compression
		iS_N	52 12	7	-4			41°3	H 03 38 16
		iSS_{NE}	55 12	10	-4	-3			
		eL_E	58.5	25					
		ME	04 03.9	18		6			
		MN	04.8	19	8				
		MZ	05.0	20			5		
318	" 21	iP_Z	11 08 31	7			-6	8450	Dilatation
		iPP_Z	11 19	6			+13	74°8	H 10 56 52
		$iPPP_Z$	13 04	5			+8		
		iS_{NE}	18 04	7	-9	-8			
		$iSKS_{NE}$	18 31	7	-	-5			
		$iScS_N$	18 36	7	+13				
		iPS_E	18 41	8		-14			
		eLR_Z	30.6	32					
		MN	34.4	20	10				
		MEZ	35.4	20		20	19		
319	" 28	$(P)_Z$	16 35 58						
		$i(sP)_E$	38 40	7		+5			
		$i(sP)_Z$	38 42	7			+17		
		iS_{NE}	39 36	6	-35	-5			
		iE	39 42	6		+9			
		$i(PcS)_N$	42 51	10	+13				
		$iScS_E$	45 41	4		-5			
		$iScS_N$	45 42	4	-9				
320	" 31	$(P)_Z$	10 14 55						P masked by micro-seisms.
		iS_N	19 03	3	-3				
		e_N	22 00	15					
		iSS_N	22 14	7	-6				
		$iScS_N$	24 12	5	-9				
		$iScS_E$	24 13	5		-2			
		iNE	24 27	6	-5	+3			

Minor shocks: 3d 01.0h, 06.6h; 5d 06.6h, 15.8h; 6d 09.3h; 7d 11.1h; 12d 08.8h; 13d 23.7h; 17d 00.8h; 18d 16.8h.

1951, September.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1951		h m s	s	μ	μ	μ	km	
321	Sept.1	e(S)$_N$	05 02 37						
		e(SKS)$_N$	02 50						
		eLR$_N$	16.4	27					
		MNEZ	22.6	18	3	3	4		
322	" 1	iPZ	09 01 08	6			-4	8650	Dilatation
		iS$_N$	10 57	6	-3			77°8	H 08 49 12
		iS$_E$	10 58	6		+			
		i$_N$	11 19	8	+3				
		e(PS)$_{NE}$	11 38	26					
		eLQ$_N$	21.5	26					
		eLREZ	24.1	28					
		MNEZ	31.8	17	7	9	13		
323	" 3	iZ	00 06 29	5			+4		
		e(S)$_N$	11 03	11					
		eLZ	14.3	?					
327	" 8	iPZ	16 20 28	3			+2	3010	Compression
		iPcPZ	23 29	3			+3	27°1	h 0.08
		iS$_N$	24 29	5	-8				H 16 15 27
		iN	26 14	5	-5				
		iN	27 00	6	-5				
		iScS$_N$	30 21	4	-4				
328	" 9	iPZ	04 51 04	3			-2	4380	Dilatation
		iPPZ	52 31	6			-5	39°4	H 04 43 35
		iPPPEZ	52 55	6		-4	+5		
		iS$_E$	57 02	9		-6			
		eSS$_N$	59 45	13					
		eL$_N$	05 01.3	28					
		MEZ	06.8	16		16	19		
		MN	07.2	13	9				
329	" 12	iPZ	15 22 37	6			+4	8670	Compression
		iS$_E$	32 27	6		-3		78°0	H 15 10 29
		iScS$_E$	32 49	6		-4			
		eL$_E$	44.1	30					
		MNZ	50.7	26	6		4		
330	" 13	iZ	11 54 58	3			+2		Masked by micros.
331	" 13	iPZ	16 33 48	4			+3	4380	Compression
		iS$_E$	39 47	8		+4		39.4	H 16 26 20
		eSSNZ	42 31						
		MNE	47.8	19	9	8			
		MZ	51.7	18			6		
334	" 16	iPZ	01 37 06	3			+4	2610	Compression
		iPPZ	37 39	4			-4	23°5	H 01 31 59
		iPPPE	37 48	5		-3			
		eS$_N$	41 14	7					
		iEZ	41 27	7		-5	+5		
		isS$_N$	41 28	9	-10				
		iN.	41.55	6	+7				
		eL$_E$	43.2	30					
		MNEZ	45.7	15	2	2	4		
		iE	48 46	4		+4			
336	" 16	i(P)Z	16 39 15	5			+5		Compression
		i(PP)Z	40 37	3			-2		
		i(S)$_N$	44 05	5	-4				
		MN	53.6	15	2				
337	" 17	iPZ	12 04 53	4			+2	4020	Compression
		ipPZ	05 03	5			+4	36°2	H 11 57 52
		ePPZ	06 16						
		iE	06 26	7		+3			
		iZ	06 27	7			+5		
		iS$_E$	10 30	10		-4			
		i$_N$	10 37	?	+				
		eLQ$_E$	13.2	23					
		eLREZ	14.9	27					
		MN	16.6	20	6				
		MEZ	17.3	19		10	10		
338	" 17	i(P)Z	20 57 46	3			+2		Compression
		i(S)E	21 05 00	6		+2			
		eLZ	15.6	28					
		MEZ	18.5	27		5	6		
		MN	19.0	26	11				

1951, September.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1951		h m s	s	μ	μ	μ	km.	
340	Sep.19	i(S)E	01 22 12	5		-6			Masked by micro-seisms.
		eLRZ	24.0	24					
		MNEZ	26.1	18	12	14	19		
342	" 21	iPZ	09 18 17	4			-4	4500	Dilatation
		ipPZ	18 28	5			-5	40°3	
		iSNE	24 22	7	-5	+5			
		iE	27 31	6		-4			
		iN	27 37	6	+5				
		iE	27 41	6		+5			
		eLE	29.4	25					
		MNEZ	35.2	24	13	8	9		
344	" 21	iPEZ	18 50 33	4		-2	+4	2330	Compression
		ipPEZ	50 45	4		-1	+2	21.0	H 18 45 50
		eSE	54 20	8					
		eLN	55.3	20					
		ME	59.0	19		5			
		MNZ	59.5	17	6		6		
		i(ScS)N	19 01 40	6	+6				
352	" 28	e(P)Z	01 31 01						
		i(PP)Z	31 32	4			+3		
		i(SS)N	36 23	4	-4				
		eLZ	38.3	23					
		MN	40.1	15	8				
		MEZ	40.8	17		10	8		
353	" 28	e(P)Z	03 39 12						
		i(S)N	44 53	5	+3				
		iE	44 56	5		+2			
		eZ	47 38						
		eLNE	51.6	26					
		ME	55.5	19		8			
		MZ	55.9	18			11		
		MN	56.3	16	9				
355	" 28	i(P)EZ	14 43 15	?		+	-		Dilatation
		e(PP)E	43 51						
		eLN	47.9	21					
		eLRZ	50.3	24					
		MNEZ	52.7	16	15	15	21		
356	" 28	eSN	17 34 43						
		eLZ	37.6	20					
		MNEZ	39.4	16	2	3	3		
357	" 28	e(S)E	22 35 03						
		eLZ	38.1	21					
		MN	38.6	15	4				
		MEZ	40.1	18		5	5		
358	" 28	iPEZ	23 34 26	4		-5	+7		Compression
		iZ	34 46	?			+		
		iE	34 47	?		-			
		iE	35 27	8		-18			
		eLZ	40.6	28					
		MN	43.5	16	65				
		MEZ	44.1	18		115	135		
364	" 29	iPZ	12 25 55	3			-3	3000	Dilatation
		eSE	31 30					35°0	H 12 18 56
		eN	33 13						
		iScSNE	36 11	4	+4	+4			
367	" 30	ePZ	04 27 12						
		ePPEZ	27 47						
		eLN	33.4	18					
		MN	36.0	15	3				
		MEZ	36.7	16		7	8		
368	" 30	ePZ	08 53 31						
		eLN	59.6	18					
		MN	09 02.3	15	3				
		MEZ	03.0	18		6	9		

Minor shocks: 03d 09.9h; 5d 08.3h; 7d 21.4h; 14d 12.9h, 23.3h; 16d 16.6h; 19d 04.9h; 21d 03.6h, 11.0h, 22.7h; 23d 15.3h; 27d 06.6h, 18.9h, 20.0h, 20.6h, 23.5h; 28d 12.9h; 29d 00.6h, 04.0h, 05.4h, 06.2h, 09.4h, 16.8h, 19.8h; 30d 09.7h, 11.4h.

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Director.

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Riverview College Observatory

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN

$\Phi = 33° 49' 46''$ S. $\lambda = 151° 9' 30''$ E. h = 25m. Foundation : Triassic Sandstone.

INSTRUMENTS :

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS, EW)
2. Wiechert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.) (NS, EW)
4. Gailitzin Aperiodic Seismometer with Galvanometer registration (NS, EW, Vert)

		V	T_0	$\epsilon : 1$	$\frac{r}{T_0^2}$		T_1 (Galv.)	T (Pend)	μ^2	V_8
N	1 3	209	7.4	5.9	0.002	4	12.0	12.1	+0.03	540
E	1 3	230	6.9	4.8	0.006	4	12.3	12.5	-0.02	530
Z	2					4	10.9	10.8	-0.03	460

No.	Date	Phase	Time (G.M.T.)	Per	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1951		h. m. s.	s.	μ	μ	μ	km.	
379	Oct. 4	iPZ	14 11 48	4			-4	3010	Dilatation
		iPP_E	12 34	5		+3		27°1	H 14 06 07
		iPP_Z	12 36	5			+3		
		eS_E	16 21						
		eL_N	18.5	16					
		MN	21.3	13	1				
		ME	21.8	14		2			
		MZ	22.9	14			2		
381	" 5	ePE_Z	06 36 24					3010	
		iE	36 53	5		-4		27°1	H 06 30 41
		eS_E	40 57						
		eLQ_N	42.0	19					
		eLR_{EZ}	43.3	22					
		MN	44.9	16	6				
		MEZ	45.0	19		8	8		
382	" 5	iPZ	11 43 19	3			+2	3120	Compression
		iEZ	43 52	7		-3	+6	28°1	H 11 37 28
		iE	45 10	7		+5			
		iE	45 42	6		+4			
		eN	47 34						
		iS_N	48 00	7	+4				
		iN	48 28	10	+6				
		iE	48 30	7		+5			
		iN	48 44	9	-8				
		iSS_N	49 22	8	+5				
		$iSSS_N$	49 41	12	+14				
		eLR_Z	50.7	?					
		MN	53.3	14	15				
		MEZ	55.2	15		15	16		
384	" 6	iZ	02 34 52	4			+3		
		iE	34 57	4		+2			
		MN	43.3	14	2				
		MEZ	45.1	16		3	2		
385	" 6	ePE_Z	03 34 28					3130	H 03 28 36
		iE	35 12	5		+2		28°2	
		iZ	35 36	5			+4		
		eS_E	39 10						
		iS_N	39 14	6	-3				
		iSS_N	40 37	?	-				
		eLR_{EZ}	41.9	24					
		MN	43.4	14	8				
		MEZ	45.3	16		8	9		
388	" 9	i(P)Z	13 49 13	4			+4		Compression
		iZ	49 41	3			+2		
		$(S)_N$	53 11	7					
		i_N	53 46	7	+3				

1951, October.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1951		h m s	s	μ	μ	μ	km.	
389	Oct. 9	iP_Z	15 45 09	4			-5	2330	Dilatation
		iP_{NE}	45 10	5	+5	+3		21°0	H 15 40 26
		ipP_Z	45 17	5			-16		
		i_{NE}	45 19	5	+5	+12			
		$iPPP_Z$	45 39	3			-4		
		eS_N	48 56	9					
		i_E	49 03	5		-11			
		i_Z	49 05	6			-8		
		i_N	49 06	9	+17				
		i_E	49 10	6		+20			
		i_Z	49 13	6			+18		
		i_E	49 20	5		-13			
		iSS_E	49 29	7		-10			
		$iSSS_N$	49 48	8	+14				
		eLR_N	50.3	21					
		M EZ	52.0	17		9	13		
		MN	52.4	14	11				
390	" 10	iP_Z	22 14 37	4			-3	2820	Dilatation
		eS_N	18 59					25°4	H 22 09 11
		e_E	19 04						After iP all
		eSS_E	20 00						readings are
		MNE	24.1	11	3	2			from Wiechert.
391	" 11	iP_{NZ}	01 43 31	4	-3		+6	3170	Compression
		ipP_Z	43 46	3			-3	28°5	H 01 37 37
		iS_{NEZ}	48 15	7	-17	-19	-9		
		isS_N	48 31	7	-16				
		i_E	48 34	8		+17			
		i_N	48 38	8	-29				
		i_N	49 05	8	-13				
		i_N	49 17	8	-22				
		i_E	49 25	7		+5			
		eLQ_E	49.6	22					
		i_N	49 49	9	-24				
		i_E	49 57	9		+18			
		i_N	50 44	7	-12				
		eLR_Z	50.9	30					
		MNZ	53.8	20	55		48		
		ME	56.9	13		35			
		eW_2N	04 34	20					
394	" 13	iP_Z	22 40 47	3			+1	9500	Compression
		e_Z	42 48	13				85°5	H 22 28 11
		iS_{NE}	51 15	6	+	-			
		eSS_E	56 48						
		eSS_N	56 49						
		eLQ_E	23 01.5	37					
		$MNEZ$	17.3	19	8	11	9		
395	" 14	iP_Z	09 38 37	4			-5		Dilatation
		iPP_Z	40 30	4			-4		
		e_E	45 15	6					
		i_{NE}	45 19	4	+3	+3			
		i_N	48 11	6	+3				
		i_{NE}	48 38	5	+2	-2			
		i_N	52 38	5	+3				
		i_N	53 10	6	+6				
		eLR_Z	53.3	28					
		MEZ	58.3	22		5	5		
		MN	10 00.0	19	10				
398	" 18	iP_Z	08 38 10	5			+5	8300	Compression
		ipP_Z	38 28	7			-8	74°8	h 0.005
		iS_E	47 40	7		-5			H 08 26 29
		iS_N	47 43	7	-3				
		i_E	47 46	7		+9			Large microseisms
		isS_E	48 11	9		-7			present.
		isS_N	48 12	9	-6				
		iSS_E	52 28	8		+5			
		eLQ_E	58.8	30					
		eLR_Z	09 02.6	30					
		MN	05.3	22	10				
		MEZ	07.5	22		5	12		

1951, October.
RIVERVIEW COLLEGE OBSERVATORY.
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1951		h m s	s	μ	μ	μ	km.	
400	Oct.21	iP_Z	21 44 49	4			+4	7170	Compression
		ipP_Z	45 01	6			+23	64°6	H 21 34 13
		$iPcPNZ$	45 12	4	-21		+39		
		i_{NZ}	46 02	7	+21		-25		
		i_{NEZ}	47 25	8	-23	+12	+28		
		iS_{NE}	53 25	?	-	-			
		mN	53 38	18	68				
		iE	53 43	?		-			
		iN	53 52	?	+				
		iE	53 58	?		+			
		iN	54 56	?	-				
		iSS_E	57 42	18		-77			
		iN	57 48	10	+50				
		iN	22 00 25	11	+44				
		eL_N	00.6	40					
		iE	00 52	?		+			
		ME	11.0	20		195			
		MN	11.6	18	220				
		MZ	13.4	20			310		
		ME	14.5	18		220			
		eW_2	00 15.7	30					
401	" 22	iP_Z	03 40 07	5			-4	7250	Dilatation
		iNZ	40 26	7	+6	-12		65°1	H 03 29 27
		i_Z	42 00	6			+16		
		iPP_Z	42 58	?			+		
		iS_E	48 46	15		+18			
		iN	48 50	12	+23				
		i_E	48 54	12		-40			
		iPS_{NE}	49 08	10	-36	-37			
		$iPPS_N$	49 20	15	+55				
		i_{NE}	49 38	13	+46	-37			
		iN	50 19	13	+42				
		iE	52 25	10		-16			
		iSS_E	53 04	12		+31			
		iN	53 23	11	+39				
		$iSSS_N$	56 06	11	+32				
		$iSSS_E$	56 08	14		+23			
		eLR_E	58.9	24					
		iE	59 32	12		-46			
		ME	04 04.6	16		63			
		MNZ	06.4	20	100		65		
402	" 22	iS_E	04 47 54	8		-4			
		eL_N	57.6	21					
403	" 22	iP_Z	05 28 22	5			-4		Dilatation.
404	" 22	iP_Z	05 53 51	3			-3	7050	Dilatation
		i_Z	53 54	7			+14	63°4	H 05 43 13
		iS_N	06 02 10	8	-9				
		i_{NE}	02 26	13	+38	+21			
		iN	02 44	9	+22				
		iE	02 51	10		-19			
		iN	03 01	7	-19				
		iE	04 02	11		+21			
		iE	05 56	8		+12			
		iN	06 26	9	-21				
		iE	06 39	9		+10			
		eL_N	09.2	23					
		MN	15.2	22	42				
		ME	18.1	19		36			
		eW_2NEZ	08 15						
406	" 22	$i(P)_Z$	11 21 58	4			-3		Dilatation
		$e(S)_N$	30 10						
		eN	30 21	10					
		iE	30 28	7		+4			
		iN	30 36	7	+2				
		iE	31 53	8		-4			
		iE	35 02	7		-4			
		eL_E	39.8	24					
		MZ	48.3	19			6		
		MN	48,8	22	7				
		ME	50.1	22		15			

1951, October.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1951		h m s	s	μ	μ	μ	km.	
407	Oct.22	ePZ	12 59 22					7160	H 12 48 46
		iS_N	13 07 58	6	-3			64°6	Masked by micro-
		MNEZ	25.5	22	6	5	8		seisms.
408	" 22	iS_N	13 20 32	7	-7				
		MNEZ	37.8	19	6	5	7		
410	" 22	iPZ	15 40 29	?			+	7160	Compression
		iS_N	49 05	8	-7			64°6	H 15 29 53
		iE_E	49 17	?		-			
		iE	49 42	?		+			
		iE_E	50 23	?		-			
		eL_E	59.6	21					
		MNEZ	16 06.6	19	8	12	16		
414	" 23	iPZ	01 30 08	3			+4	7250	Compression
		ipPZ	30 22	3			-4	65°3	H 01 19 27
		iPcPZ	30 38	3			+7		
		iS_N	38 48	8	+5				
		iSS_N	42 59	9	+7				
		eL_E	47.8	29					
		MN	51.7	22	16				
		ME	55.8	21		13			
		MZ	57.0	18			9		
416	" 23	iPZ	09 05 53	7			+6	7220	Compression
		ipPZ	06 03	7			+9	65°1	H 08 55 13
		iZ	06 18	4			+3		
		iS_{NE}	14 32	7	-3	-4			
		iPS_N	14 59	7	+7				
		eE_E	15 48	10					
		ME	29.5	23		7			
		MN	32.2	23	12				
417	" 24	$e(S)_N$	03 58 14						Masked by micro-
		ME	04 11.9	22		4			seisms.
419	" 25	iPZ	12 30 27	4			+4	7200	Compression.
		iS_{NE}	39 04	9	-4	-8		64°8	H 12 19 49
		isS_N	39 20	7	-8				
		ePS_N	39 30	15					
		$iScS_N$	40 16	6	+3				
		MNZ	57.0	22	11		13		
		ME	57.5	19		4			
420	" 26	iPZ	05 40 36	6			-2	2990	Dilatation
		i_N	40 41	4	-4			26°8	H 05 34 57
		ipPZ	40 49	5			-3		
		eN_N	44 41	15					
		iS_E	45 08	6		-4			
		i_N	45 12	7	+7				
		i_N	45 37	7	-11				
		iE_E	45 38	7		-6			
		i_N	46 12	8	-7				
		$iSSS_N$	46 43	5	+5				
		$eLRE_Z$	47.3	27					
		MZ	49.8	16			5		
		MNE	51.5	13	7	11			
421	" 28	ePZ	02 06 26					7200	H 01 55 48
		eS_N	15 03					64°8	
		eE_E	16 35						
		ME	31.2	17		1			
423	" 28	$iPNZ$	06 53 07	5	+9		+8	2430	Compression
		ipPNZ	53 18	6	+20		+25	21°9	H 06 48 15
		iPPZ	53 32	6			+8		
		iS_E	57 02	7		-6			
		iSS_Z	57 38	7			+7		
		i_N	57 44	9	-13				
		$iSSS_{EZ}$	57 53	9		+31	-21		
		iLR_E	58 26	14	-67				
		MNEZ	07 00.1	13	24	36	24		
427	" 31	$e(S)_E$	05 34 37	12					
		eL_E	37.9						
		ME	41.3	18		2			
		MNZ	41.6	19	3		4		

1951, October-November.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remarks
	1952		h m s	s	μ	μ	μ	km.	
429	Oct. 31	iP_Z	07 06 28	6			+4	6710	Compression
		ipP_Z	06 42	6			-9	60°4	H 06 56 20
		iS_{NE}	14 39	8	+14	+14			
		isS_N	14 53	8	+18				
		isS_E	14 54	8		+15			
		$iScS_E$	16 16	7		+6			
		$iScS_N$	16 17	7	+7				
		iSS_N	18 25	9	+8				
		eL_N	23.7	32					
		MNEZ	30.4	25	88	43	53		
431	" 31	eS_N	10 40 33						
		eE	40 40						
		$(ScS)_N$	42 12						
		MN	56.1	15	7				
		MEZ	56.7	22		6	6		
432	" 31	$e(PP)_Z$	12 00 46						
		$eSKS_E$	07 10	12					
		eE	15 01	22					
		eE	16 16	22					
		eE	18 40	24					
		eL_E	21.2	50					
		MNZ	30.8	24	25		16		

Minor shocks: 1d 04.2h, 10.6h; 2d 04.7h; 3d 03.7h, 17.8h, 20.8h; 4d 05.4h, 08.8h, 17.1h; 5d 14.9h; 8d 05.1h; 9d 13.8h; 12d 07.7h; 13d 07.4h; 15d 21.5h; 18d 07.9h; 21d 05.6h; 22d 09.2h, 15.1h, 19.0h, 20.9h, 21.4h; 23d 04.0h; 24d 04.8h; 28d 06.8h, 15.4h; 29d 12.5h, 15.7h; 31d 06.6h, 08.6h.

433	Nov. 1	$e(P)_Z$	07 54 08						
		$e(S)_N$	58 16	7					
		$i(SS)_N$	59 05	6	-2				
		eLR_E	08 00.0	21					
		MNEZ	02.5	19	2	2	3		
435	" 2	ePZ	15 40 05					2590	H 15 34 59
		eS_E	44 11					23°3	
		eLR_N	45.8	19					
		MN	48.1	13	1				
		MEZ	49.3	14		1	1		
436	" 4	iP_{NZ}	09 00 16	4	+4		-5	3220	Dilatation
		$i(pP)_{NZ}$	01 14	3	-5		+6	29°0	h 0.03?
		iPP_{NZ}	01 22	5	+9		-7		H 08 54 35
		iS_N	04 49	?	-				
		$i(sS)_N$	06 33	6	+14				
		iE	06 34	7		+18			
		iSS_N	06 39	7	+8				
		$i(ScS)_N$	10 06	3	+10				
437	" 4	iP_Z	11 18 53	5			+1	5780	Compression
		iS_{NE}	26 13	5	-14	+3		52°0	H 11 09 45
		iPS_N	26 28	6	-11				
		iN	26 43	8					
		iSS_E	29 47	10		+5			
		iSS_N	29 49	10	+8				
		eN	29 59	20					
		iZ	30 13	13			-12		
		eL_E	34.4	33					
		MNEZ	40.4	19	10	7	10		
438	" 4	$(P)_Z$	17 19 59						
		iE	26 08	4		+3			
		eL_E	37.6	18					
439	" 6	iP_Z	16 52 26	6			-6	9000	Dilatation
		iN	52 29	6	+3			81°0	H 16 40 13
		iNZ	52 43	6	-3		+8		
		iS_E	17 02 31	7		-15			
		iN	02 34	7	-9				
		iE	02 36	11		+46			
		iN	02 41	6	+18				
		iE	02 59	10		+25			
		iPS_N	03 24	8	+12				
		SS_N	07 51	15					
		LQ_E	14.3	33					
		MNEZ	26.2	19	81	31	95		

1951, November.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.) h m s	Per s	Amplitude A_N μ	A_E μ	A_Z μ	Δ km.	Remarks
442	Nov. 8	iPZ	13 58 38	5			+2	10860	Compression
		ePPZ	14 02 45					97°8	H 13 45 05
		$iSKS_{NE}$	09 16	8	-4	+1			
		eS_E	09 58						
		isS_E	10 14	8		-5			
		i_N	13 42	7	-5				
		eSS_N	16 43	9					
		$eSSP_N$	16 52	22					
		eLR_E	30.2	28					
		MNEZ	40.6	18	3	4	3		
443	" 10	iS_N	05 44 11	6	-12				Masked by heavy microseisms.
		eL_N	46.4	16					
		i_E	46 34	6		-7			
		MN	50.7	12	24				
		MEZ	51.0	17		14	17		
444	" 10	eE	07 28 04						Masked by heavy microseisms.
		iE	28 25	7		+8			
		i_N	29 35	5	+12				
		i_N	29 57	6	+14				
		eL_E	30.9	15					
		MNEZ	33.3	12	15	11	16		
445	" 11	iS_E	12 37 24	6		-2			
		eLQ_E	47.9	27					
		eLRZ	55.4	24					
		MN	13 03.0	20	2				
446	" 12	ePZ	08 21 28					8950	H 08 09 35
		iS_E	31 32	8		+14		80°7	
		iS_N	31 37	8	+9				
		i_N	31 46	9	-8				
		iPS_N	32 19	9	+11				
		eSS_N	36 54	20					
		eLQ_E	43.1	28					
		MNEZ	55.1	19	21	10	21		
447	" 12	iP_{EZ}	09 19 09	3		+5	-9	3130	Dilatation
		ipP_{EZ}	20 17	4		+6	-6	28°2	h 0.05
		i_{EZ}	20 27	4		+9	-6		H 09 13 46
		iS_{NE}	23 28	4	-6	+10			
		i_N	25 42	9	+9				
		i_E	25 45	9		-4			
		iNEZ	25 54		+22	-17	-41		i_{NE} Per.10s, i_E 7s
		i_E	26 00	7		+15			
		i_N	26 04	7	+16				
		i_E	26 09	7		-20			
		i_Z	26 10	7			-19		
		$iScS_N$	29 16	4	+7				
		$iScS_E$	29 17	6		+17			
		iN_E	32 01	6	-9	+15			
448	" 13	eZ	08 06 47						Masked by micro-seisms.
		$i(S)_E$	12 58	4		+3			
		eL_E	19.2	24					
453	" 16	ePZ	17 39 00					2930	H 17 33 25
		$i(pP)_E$	39 13	5		+3		26°4	Large microseisms present.
		i_Z	39 16	4			+9		
		$iPPP_E$	39 53	5		+6			
		iS_E	43 29	6		-5			
		i_E	43 50	8		+8			
		i_N	44 11	5	-5				
		i_N	44 48	5	-6				
		eLRZ	45.3	24					
		ME	47.1	20		21			
		MN	48.1	16	13				
		MZ	48.2	19			35		
454	" 17	$i(P)_Z$	18 03 16	4			-5		Dilatation
		$e(S)_N$	10 05						
		$e(SS)_N$	13 17						
		ME	22.1	12		1			
455	" 18	iPZ	09 39 15	6			-4	9500	Dilatation
		iS_N	49 43	?	-			85°6	H 09 26 39

1951, November.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remarks
	1951		h m s	s	μ	μ	μ	km.	
456	Nov. 18	iPZ	09 48 34	3			+3	9650	Compression
		iPcPZ	48 40	3			+6	86°8	H 09 35 41
		iN	48 42	5	+4				
		iE	48 44	6		+5			
		iS_N	59 03	8	+46				
		iS_E	59 05	8		+22			
		isS_{NE}	59 22	8	-44	-20			
		$iPPS_E$	10 00 29	9		-30			
		iN	00 50	8	+				
		iN	01 10	6	+38				
		iN	02 24	8	-21				
		iN	03 26	8	+36				
		SS_E	04 39						
		iN	04 59	8	+18				
		eLQ_N	11.8	53					eLQ and eG from Wiechert.
		eGN	12.9	70					
		ME	21.3	27		150			
		MN	21.8	27	190				
		ME	23.0	21		110			
		MN	27.7	19	150				
		MZ	27.9	21			78		
457	" 19	iPZ	10 44 21	3			+2	2550	Compression
		$ePPP_Z$	45 01	10				23°0	H 10 39 18
		iS_{NE}	48 25	6	-1	-2			
		iZ	48 35	6			-4		
		isS_{NE}	48 38	7	+4	+6			
		SSS_N	49 28	9					
		eLRE	50.2	21					
		MN	52.9	13	3				
		MZ	53.1	16			3		
		ME	53.5	15		2			
459	" 19	$e(P)_Z$	21 10 49						
		$e(S)_E$	16 20						
		eLQ_N	19.4	22					
		MN	23.4	13	7				
		MZ	25.2	16			8		
		ME	25.3	16		8			
460	" 22	ePZ	02 10 57						
		iPP_{NZ}	11 49	8	-6				
		iS_N	15 38	10	-20				
		iZ	15 41	7			+10		
		iN	15 55	9	-19				
		iE	16 04	7		-7			
		iZ	16 05	13			-12		
		iN	16 06	13	+51				
		eE	16.2	23					
		iSS_N	17 10	9	+9				
		eL_Z	19.0	30					
		eL_N	19.2	30					
		MZ	21.4	19			47		
		MNE	21.5	19	42	34			
462	" 22	$e(P)_Z$	12 58 31						Masked by micro-seisms.
		ePPE	59 18						
		eS_N	13 03 03	7					
		eSS_E	04 33	9					
		eLR_E	05.8	22					
		MN	08.2	15	6				
		MEZ	08.7	17		10	12		
463	" 24	iPZ	18 57 44	6			+6	7150	Compression
		iZ	57 52	6			+13	64°4	H 18 47 09
		iPcPZ	58 16	4			+5		
		iPPPZ	19 01 43	7			+20		
		iS_N	06 19	8	+5				
		iS_E	06 20	8		+9			
		iE	06 31	11		+31			After PS phases obscured by following shock.
		iPS_N	06 44	11	+8				

1951 November-December.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per	Amplitude AN	Amplitude AE	Amplitude AZ	Δ	Remarks
	1951		h m s	s	μ	μ	μ	km.	
464	Nov.24	iPZ	19 00 50				+	7100	Compression
		iZ	00 54	6			-14	64°1	H 18 50 17
		iZ	00 59	?			+		
		iS_E	09 23	8		+20			Some of the
		i_N	09 30	9	-23				impulses given
		e_N	09 34	30					here may refer to
		iPS_E	09 46	8		+21			the previous
		iNE	09 59	10	-77	+47			shock.
		i_N	10 24	9	-34				
		$iSKS_E$	10 38	9		+19			
		i_N	11 21	12	-45				
		i_N	14 10	10	+58				
		eLR_E	19.7	26					LR from Wiechert.
		MNE	26.1	19	61	61			
		MNZ	28.2	17	64		70		
		W_2NEZ	21 32	22	9	9	16		
465	" 26	ePZ	06 49 05					7050	
		iPZ	49 08	4			+2	63.5	Compression
		iS_E	57 34	7		+3			H 06 38 36
		iS_N	57 35	7	+3				
		$iScS_N$	58 53	6	+4				
		$eSSS_E$	07 04 26	14					
		eL_N	06.3	25					
		ME	13.8	20		6			
		MNZ	16.1	18	7		6		
468	" 29	iPZ	04 54 00	3			+3	4970	Compression
		ipPZ	54 25	3			-3	44°9	h 0.01
		i_{NE}	54 31	5	-5	+5			H 04 45 53
		i_Z	54 57	4			+5		
		iPPZ	55 50	4			+5		
		i_N	56 15	7	-6				
		iS_N	05 00 30	6	-12				
		iS_E	00 31	8		+18			
		i_Z	00 33	6					
		i_E	00 43	7		+15			
		i_E	00 51	6		-4			
		iPS_N	00 57	9	+8				
		i_E	01 14	6		-10			
		i_N	01 18	5	+11				
		iSS_N	03 45	8	+9				
		i_Z	03 53	8			+17		
		$i(ScS)_N$	03 55	6	-11				
		i_E	03 59	9		-28			
		i_N	04 26	7	+9				
		i_Z	04 28	8			+9		
		i_E	04 44	9		-7			
		MN	09.1	15	10				
		ME	10.6	16		8			
		MZ	13.5	18			12		

Minor shocks: 1d 12.1h; 6d 19.6h; 7d 02.8h; 15d 09.2h, 10.7h, 11.4h; 16d 16.1h 19d 14.1h; 22d 20.4h; 26d 17.1h, 18.3h; 29d 15.0h.

470	Dec. 5	P_Z	07 09 08					7080	H 06 58 37
		eS_N	17 39	7				63°8	
		e_E	17 42	16					
		ePS_N	17 59	7					
		$iScS_N$	18 54	6	+3				
		eLR_E	28.4	25					
		MNEZ	34.2	22	3	3	4		
471	" 5	$i(S)_N$	18 15 43	4	-3				
		i_N	16 02	6	-3				
		eL_E	18.2	15					
473	" 7	$e(P)_Z$	20 52 53						
		PP_Z	53 55						
		S_N	58 00						
		e_N	58.1	19					
		i_E	59 58	7		+3			
		eL_Z	21 01.4	30					
		ME	03.9	14		7			
		MN	04.0	21	9				
		MZ	04.2	18			9		

RIVERVIEW COLLEGE OBSERVATORY, SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.) h m s	Per. s	Amplitude AN μ	AE μ	AZ μ	Δ km.	Remarks
	1951								
474	Dec. 8	iP_{NEZ}	04 25 57	4	+4	+4	+13	8400	Compression
		$iNEZ$	26 01	6	-9	-14	-35	75°5	H 04 14 16
		$iPcPZ$	26 13	4			+		
		iNE	26 14	4	-13	-			
		iN	26 38	7	+13				
		iE	26 39	7		+15			
		iZ	27 34	8			-37		
		iE	27 49	5		+7			
		iPP_E	28 39	5		+16			
		iZ	28 51	5			-20		
		iN	28 53	5	+16				
		iS_{NE}	35 34	6	-12	-			
		iN	35 40	7	-32				
		iE	35 42	8		+34			
		iN	35 49	8	+36				
		iE	36 05	7		+33			
		iE	36 20	9		-120			
		iN	36 26	8	+73				
		iE	37 31	8		-68			
		eL_QN	45.3	48					
		eLR_E	49.4	32					
		$MNEZ$	55.8	15	160	175	260		
		eW_2E	06 36.7	30					
475	" 8	$i(S)_E$	13 56 14	5		+2			
476	" 8	$(P)_Z$	14 04 00						Masked by micro-
		eS_N	08 25	8					seisms.
		iN	08 49	5	+4				
		iN	09 37	5	-4				
		iN	09 53	5	-5				
		eLE	11.1	20					
		ME	13.2	16		3			
		MNZ	14.6	13	2		2		
477	" 10	$(S)_N$	10 48 01	7					Masked by micro-
		eLE	50.1	22					seisms.
		$MNEZ$	52.5	15	3	1	2		
478	" 12	$i(PP)_Z$	01 57 55	4			+3		Masked by micro-
		$i(PPP)_Z$	02 00 31	6			+5		seisms.
		$e(SKS)_N$	03 13						
		$i(SKKKS)_E$	04 34	7		-3			
		iE	05 13	8		-4			
		iN	05 36	7	-4				
		$i(PS)_Z$	07 27	8			+5		
		$i(PS)_E$	07 32	8		+7			
		iZ	07 37	9			+13		
		$i(PPS)_E$	07 49	10		+7			
		$e(SS)_N$	13 51	18					
		$e(SS)_E$	13 55	21					
		$e(SSS)_N$	18 18	18					
		$eLQN$	27.2	30					
		$eLREZ$	32.1	30					
		LEZ	33.1	30		12	23		
481	" 16	$e(S)_E$	12 35 44						
		eN	36 21						
		$eLRZ$	38.0	27					
		$MNEZ$	40.0	19	1	2	3		
482	" 16	iP_{NEZ}	19 18 48	4	+1	+1	-2	2600	Dilatation
		ipP_{NEZ}	19 01	4	+2	+2	-3	23°3	H 19 13 40
		$iPPN$	19 19	5	+2				
		iS_N	22 54	7	-12				
		iNE	22 58	7	+28	-5			
		iZ	23 00	10			+10		
		iE	23 06	7		-13			
		iN	23 09	7	+12				
		iN	23 20	7	+11				
		iZ	23 27	6			-7		
		iSS_N	23 44	7	-7				
		iE	23 46	7		+7			
		$eLRZ$	24.6	30					
		$MNEZ$	26	18	9	11	11		

1951, December.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1951		h m s	s	μ	μ	μ	km.	
484	Dec.17	eE	12 43 15	15					Masked by micro-seisms.
		e_N	45 25	19					
		eL_E	47.8	22					
		MEZ	51.3	16		3	4		
		MN	53.9	13	2				
485	" 18	iP_{EZ}	14 15 44	4		+2	-3	3700	Dilatation
		iZ	17 03	4			+2	33°4	H 14 09 06
		i_E	17 04	6		+5			
		$iPPP_{EZ}$	17 14	6		-12	+14		
		i_{EZ}	17 36	6		-5	+7		
		iS_N	21 02	5	-9				
		i_E	21 29	5		+6			
		e_E	21 33	19					
		iZ	22 06	4			-7		
		i_E	22 49	6		+7			
		$iSSS_N$	23 31	12	-9				
		eLR_{EZ}	25.2	30					
		MN	25.3	19	19				
		MZ	26.1	24			26		
		$iScS_E$	26 10	4		+8			
		ME	26.4	21		20			
488	" 21	ePZ	08 49 25					8800	H 08 37 22
		eS_E	59 21	9				79°1	
		e_N	59 25						
		$eSKS_N$	59 35	12					
		ePS_E	09 00 07	10					
		e_E	03 43	11					
		eLQ_E	10.5	27					
		eLR_N	14.3	32					
		ME	22.5	22		11			
		MN	24.8	22	20				
		MZ	25.9	23			12		
490	" 22	ePZ	14 53 42					3500	H 14 47 22
		iZ	53 56	4			+2	31°4	
		$iPcPZ$	56 36	3			+2		
		iS_E	58 46	6		-2			
		eL_E	15 00.9	30					
		ME	05.5	13		7			
		MNZ	06.6	15	7		5		
491	" 23	ePZ	00 27 03					3240	H 00 21 02
		iPP_{EZ}	28 04	4		+2	-2	29°2	
		eS_N	31 52						
		eZ	32 28	18					
		eSS_N	33 24	15					
		eL_E	34.4	22					
		eL_Z	34.6	25					
		MNEZ	37.8	16	16	25	27		
492	" 23	iPZ	06 34 54	5			+11	2260	Compression
		iP_{NE}	34 55	5	+10	+4		20°2	H 06 30 19
		ipP_{NZ}	35 05	5	+12		+10		Azimuth (from iP):
		iPP_Z	35 12	6			+15		200°
		iPP_E	35 14	6		+5			Epicentre: Approx-
		i_N	35 35	5	-12				imately 52°S.,
		iS_{NE}	38 34	6	+9	-3			140°E.
		i_E	38 43	9		+24			
		i_N	38 54	7	-29				
		i_{EZ}	38 59	7		-29	-27		
		eLR_Z	39.8	27					
		MNE	42.0	10	34	34			
		MN	43.6	11	53				
		MZ	44.4	9			37		
493	" 23	$i(PKP)_Z$	07 16 40	3			+2		On Coda of No.492
499	" 25	$i(P)_Z$	15 37 55	2			+1		Compression
		$i(S)_E$	41 51	4		-2			
		e_E	44 25	6					
500	" 25	iS_E	16 21 10	5		-2			
		eL_N	40.5	21					
		MZ	50.6	19					

1951, December.
RIVERVIEW COLLEGE OBSERVATORY,
SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (G.M.T.)	Per.	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1951		h m s	s	μ	μ	μ	km.	
501	Dec.25	iP_Z	22 09 58	4			+2	3170	Compression
		iPP_{NZ}	10 36	6	+2		+2	28°.6	H 22 04 04
		iS_E	14 43	6		+2			
		iS_N	14 44	5	-2				
		eLQ_N	15.9	18					
		iSS_E	16 10	11		-10			
		eLR_Z	17.3	20					
		MN	19.1	13	5				
		MEZ	20.8	10		5	5		
503	" 26	eS_{NE}	10 30 15						
		$ePPS_N$	31 43						
		eL_N	48.2	30					
		MNE	53.3	24	3	2			
504	" 26	iP_Z	16 43 51	4			-5	10050	Dilatation
		$eSKS_N$	54 18	7				90°.4	H 16 30 52
		iS_E	54 41	7		+2			
		iPS_N	55 43	7	+2				Gutenberg's
		iPS_E	55 45	7		-2			Tables give:
		i_N	55 55	7	+2				Δ 9900 Km.,89°.1,
		iSS_N	17 00 39	9	-2				H 16 30 56
		eLR_N	13.1	27					
		ME	23.8	22		1			
		MN	24.7	22	3				
		MZ	27.1	19			2		
507	" 28	iPP_Z	09 40 15	6			-5		
		$iSKS_E$	46 00	7		+4			
		$iSKKS_E$	47 14	8		+5			
		iPS_E	49 59	10		+5			
		i_Z	50 05	9			+7		
		i_E	50 06	7		-15			
		$ePPS_Z$	51 10	18					
		iSS_E	56 42	18		-16			
		$eSSS_E$	10 00 54	16					
		eLR_{EZ}	13.6	26					
		MEZ	15.0	22		17	21		
		MN	19.5	18	11				
		eW_2E	11 31.8	22					
		MN	38.1	18	2				
		MZ	38.3	21			7		
		ME	38.5	21		5			
508	" 29	ePZ	22 14 31					6930	H 22 04 09
		eSN	22 54					62°.4	
		ePS_N	23 15						
		$eSKS_E$	24 17	10					
		eL_E	33.8	22					
510	" 30	eZ	22 35 29						Masked by micro-
		$e(PS)_E$	40 23	14					seisms.
		eLR_{EZ}	54.7	30					
		ME	23 02.1	23		25			
		MN	03.1	21	24				
		MZ	03.8	21			40		
511	" 30	$i(PS)_E$	22 45 28	7		+5			
		$i(PS)_N$	45 30	7	+7				
		eZ	50 35	27					
		eE	50 43	16					
		i_N	5 0 59	4	+7				
		eLR_N	59.8	30					
		MNZ	23 07.3	18	15		22		

Minor shocks: 6d 15.6h; 15d 06.8h, 19.6h; 17d 01.6h; 18d 20.5h; 19d 21.3h; 22d 00.5h; 23d 20.2h, 22.5h; 24d 10.3h; 25d 06.4h, 15.3h; 26d 01.7h; 27d 20.0h; 28d 03.0h; 30d 19.3h.

Unless otherwise stated, readings are from the Galitzins.
The amplitudes of initial impulses on the Galitzins are computed by Galitzin's method.
Jeffreys' & Bullen's Tables (1940) are used, unless otherwise stated.

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RIVERVIEW COLLEGE OBSERVATORY.

Bulletins & Publications received from Sept.27,1951 to July 17, 1952.

Alger (Universite)....1951 Selptember-1952 January.
Apia.....1951 April-September.
Athens.....1951 June-1952 January, March, April Preliminary.
Azores.....1951 January-August, 1952 January-March.
Barcelona.....1949 (Boletin No.38)
Beograd.....1951 July-1952 March Preliminary.
Bogota.....1950 December-1951 May.
Brisbane.....1951 January-1952 March; Provis.1951 Sept.20-1952 Jul.10
Budapest.....1949, 1950 (Rapport Microseismique); 1951 May-1952 March
California Uni.Stns...1944 October-December, 1949 October-December.
Canada.....1951 January-July.
" Eastern Network.1951 August-October.
" Resolute Bay....1950 August-1951 September.
" Western Division 1951 January-December.
Cartuja.....1939 July-December, 1940, 1941, 1942 July-Dec.,1943 Jul-
Cheb.....1951 April-August, October-1952 February. Dec
Chinchina.....1950 December-1951 May.
Cleveland.....1951 March-1952 January.
Coimbra.....1951 October-1952 March.
De Bilt.....1951 August-1952 April Preliminary.
Djakarta.....1950 July-1951 December. Provis
Ebro.....1947 October-December; 1951 August, October-1952 April
Edinburgh.....1950 January-December.
Galerazamba.....1950 December-1951 May.
Harvard.....1951 January-December.
Helsinki.....1951 April-1952 March.
Helwan.....1941, 1942; 1951 July,Aug.,Oct.-1952 Feb.
Hong Kong.....1951 December-1952 April.
Hurbanovo.....1951 June-1952 March Preliminary.
India.....1950 September, 1951 January-June.
I.S.S.....1940
Istanbul.....1951 July-1952 February.
Jena.....1950
J.S.A.....1951 Nos.8-17, 19-28, 30-39, 41-56, 58-81, 83-103,108-112
Kalocsa.....1951 April-1952 March
Kecskemet.....1952 January-March.
Kew.....1951 July-1952 April.
Ksara.....1951 July-December Provisional.
Lisbon.....1951 July-1952 February Preliminary
Malaga.....1951 March, April.
Palisades.....1951
Pasadena.....1950 October-1951 June; Preliminary No.74-76; Provisional (Air Mail) 1951 Sept.12-1952 June 23; Local shocks 1951 April-December.
Pennsylvania.....1945, 1950
Perth.....1951 July-December.
Pittsburgh.....1951
Ponta Delgada.....1951 November, 1952 March.
Praha.....1951 June-1952 March Preliminary.
Rabaul.....1951 February-september.
Rathfarnham.....1951 July-December.
Reykjavik.....1944, 1950, 1951.
Rome.....1951 June-November, 1952 January, March.
Santa Clara.....1951 August-1952 May.
Skalnate Pleso.....1951 July-1952 March Preliminary.
Strasbourg B.C.I.S....1951 April-December.
B.C.S.F....1951 June-1952 February.
I.P.G.....1951 August-1952 April.
Stuttgart.....1951 January-June, 1952 January-April.
Switzerland.....1950 (Jahresbericht)
Szeged.....1952 February, March.
Tacubaya.....1951 July-1952 March.
Tamanrasset.....1951 June-1952 January.
Tananarive.....1951 January-June.
Toledo.....1951 July-1952 March; Provisional 1951 August-1952 Apr.
Trieste.....1951 January-December.
U.S.C.G.S.....1946cApril-June 9MSI 126); Cards 1951 110-136,138-153, 1952 1-70, 72-88; 1951 S-37-53, 1952 1-26; Data sheets 1951 Sept.12-1952 June 29th.
U.S.S.R.....1944, 1946, 1947, 1948, 1949.
Vienna.....1950
Wellington.....1949 July-September; Provisional 1951 July-December.
Zi-Ka-Wei.....1948 October-1950 December.